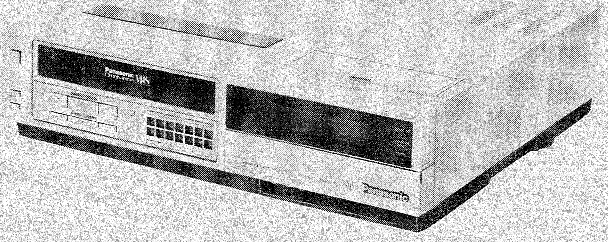
ORDER NO. VRD-8404-569
B3

Service Manual

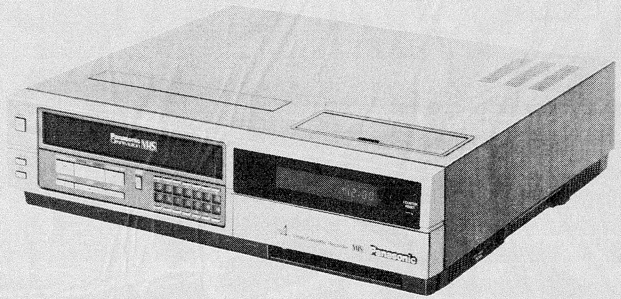
Video Cassette Recorder

Panasonic
Omnivision VHS

PV-1530
PV-1525



PV-1530



PV-1525

Vol. 1	Vol. 2	Vol. 3	Vol. 4	Vol. 5
Summary	*Mechanical Adjustment Procedures* *Electrical Adjustment Procedures*	*Block Diagrams*	*Schematic Diagrams* *Printed Circuit Board Diagrams*	*Exploded Views* *Replacement Parts List*

VHS

Panasonic®

Matsushita Engineering & Service Company
Division of Matsushita Electric
Corporation of America
50 Meadowland Parkway, Secaucus,
New Jersey 07094

Panasonic Hawaii Inc.
91-238 Kauhi St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Matsushita Electric
of Canada Limited
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
Ave, 65 De Infanteria, KM 9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

ORDER NO. VRD-8404-569
B3

Service Manual

Vol. 1

Summary

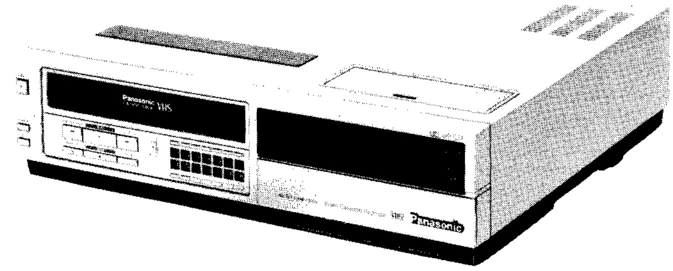
Video Cassette Recorder

Panasonic
Omnivision VHS

PV-1530
PV-1525

SPECIFICATIONS

Power Source: 120V AC ± 10%, 60Hz ± 0.5%
Power Consumption: Approx. 22 watts
Television System: EIA Standard (525 lines, 60 fields)
NTSC color signal
Video Recording
System: 4 rotary heads, helical scanning system
Luminance: FM azimuth recording
Color signal: Converted subcarrier phase shift recording
Audio Track: 2 track (PV-1525: 1 track)
Tape Format: Tape width 1/2″ (12.7mm), high density tape
Tape Speed: SP mode: 1-5/16 i.p.s. (33.35mm/s)
LP mode: 21/32 i.p.s. (16.67mm/s)
SLP mode: 7/16 i.p.s. (11.12mm/s)
Record/Playback Time: 8 HRS. with 160 min. type tape used in SLP mode
FF/REW Time: Less than 6 min. with 120 min. type tape
Heads: Video: 4 rotary heads
Audio/Control: 2 stationary head
(PV-1525: 1 stationary head)
Erase: 1 full track erase
1 audio track erase
Input Level: Video: VIDEO IN Jack (RCA type)
1.0Vp-p, 75Ω unbalanced
Audio: AUDIO IN Jack (RCA type)
(Right, Left)
−20dB, 50kΩ unbalanced
MIC IN jack (M6) (Right, Left)
−70dB, 4kΩ unbalanced
PV-1525: MIC IN jack (M3)
−70dB, 4kΩ unbalanced
TV Tuners: VHF Input: VHF Ch2-Ch13, cable channels "A"~"W", "A-2", "A-1" 75Ω unbalanced
UHF Input: Ch14-Ch83, 300Ω balanced
Output Level: Video: VIDEO OUT Jack (RCA type)
1.0Vp-p, 75Ω unbalanced
Audio: AUDIO OUT Jack (RCA type)
(Right, Left)
−9dB, 1kΩ unbalanced
PV-1525: −6dB, 600Ω unbalanced
RF Modulated: Ch3/Ch4 switchable,
72dBμ, (Open Voltage)
75Ω unbalanced



Video Horizontal
Resolution: Color: more than 230 lines
B/W: more than 230 lines
Audio Frequency
Response: SP mode: 100Hz ~ 8kHz
(10dB down) LP mode: 100Hz ~ 6kHz
SLP mode: 150Hz ~ 5kHz
Signal-to-Noise Ratio: Video: SP mode: better than 41dB
LP mode: better than 41dB
SLP mode: better than 41dB
(Rohde & Schwarz noise meter)
Audio: SP mode: better than 42dB
LP mode: better than 40dB
SLP mode: better than 40dB
Operation
Temperature: 41°F—104°F (5°C—40°C)
Operating Humidity: 10%—75%
Weight: 16.8 lbs. (7.6kg)
PV-1525: 15.7 lbs. (7.1kg)
Dimensions: 16-15/16″(W) × 14-5/16″(D) × 4-1/4″(H)
(430mm × 364mm × 108mm)
Accessories Supplied:
- Remote control unit (PV-1525)
- Wireless Remote control unit (PV-1530)
- VHF connecting cable
- 300Ω—75Ω transformer
- Twin-lead cable
- V-Lock Tool

Available Tapes: 1/2″ VHS video cassette tapes
NV-T160 Approx. 1073ft. (327m), 160, 320, or 480 min.
NV-T120 Approx. 810ft. (247m), 120, 240, or 360 min.
NV-T60 Approx. 417ft. (127m), 60, 120, or 180 min.

Weight and dimensions shown are approximate.

Specifications are subject to change without notice.

Panasonic®

Matsushita Engineering & Service Company
Division of Matsushita Electric
Corporation of America
50 Meadowland Parkway, Secaucus,
New Jersey 07094

Panasonic Hawaii Inc.
91-238 Kauhi St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Matsushita Electric
of Canada Limited
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
Ave, 65 De Infanteria, KM 9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

INTRODUCTION

This Service Manual contains information which will allow the service technician to understand and service the Panasonic VHS recorder Models PV-1530, PV-1525 and the various accessories that complement the deck.
For a detailed technical explanation, please refer to the Training Manual on these models. Some of the Features incorporated in these models are: soft touch controls 14 position Electronic Tuner programable Timer Remoto Control (PV-1530: Wireless, PV-1525: Wired), One Touch Record Button (O.T.R), Picture Search in SP, LP and SLP, STILL Picture in SP, SLP, Light Editing, Auto Rewind, Frame Advance in SP, SLP, Simplified Fine Slow in SP, SLP.
These models use a multi-function display indicator which combines indicators for time, tape counter, speed, transport functions, and timer record into one easy to read digital display.
The above features plus the VHS format make the PV-1530/PV-1525 table top VCR's an excellent unit for your enjoyment

Just slightly ahead of our time...Panasonic.

CONTENTS

SPECIFICATIONS .... Cover
FEATURES 1-3
DESCRIPTION OF CONTROLS 1-4
CABLE CONNECTIONS 1-8
GLOSSARY OF TERMS 1-9

*Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
*'Dolby' and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shileds are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.
4. USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 MΩ and 5.2 MΩ.
   When the exposed metal does not have a return path to the chassis, the reading must be ∞.

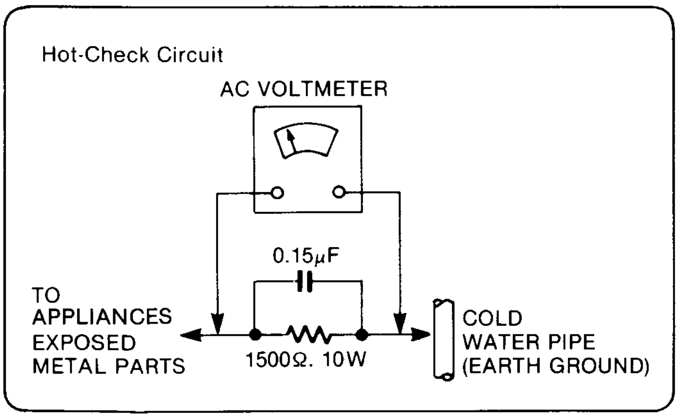

Hot-Check Circuit
AC VOLTMETER
0.15μF
TO APPLIANCES EXPOSED METAL PARTS
1500Ω. 10W
COLD WATER PIPE (EARTH GROUND)

Figure 1

LEAKAGE CURRENT HOT CHECK (See figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15μF capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).

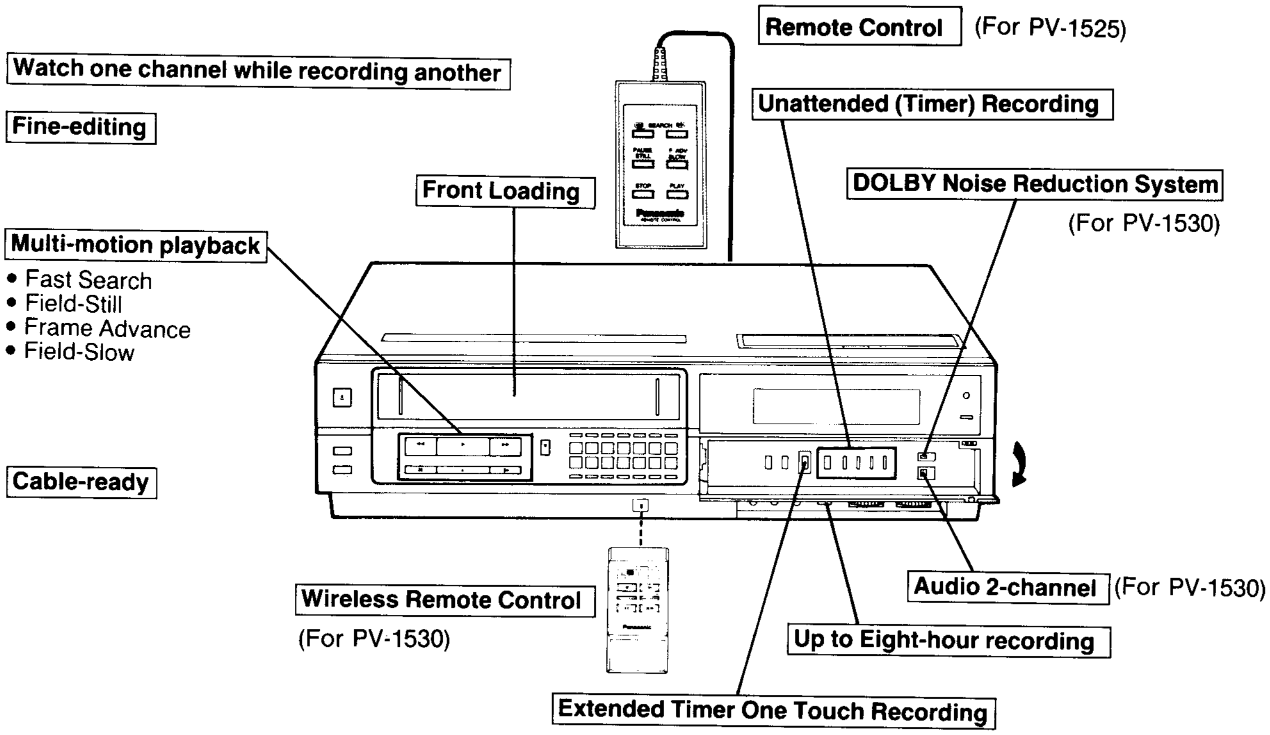
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

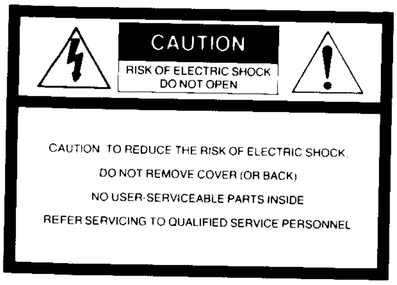
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

"NOTE to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical".

FEATURES

Your Panasonic VCR has these special features to enhance your viewing enjoyment. Feature operations are described at the referenced page numbers. To locate other information, please refer to the Table of Contents.

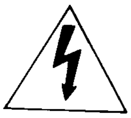

Remote Control (For PV-1525)
Watch one channel while recording another
Unattended (Timer) Recording
Fine-editing
Front Loading
DOLBY Noise Reduction System (For PV-1530)
Multi-motion playback
• Fast Search
• Field-Still
• Frame Advance
• Field-Slow
Cable-ready
Wireless Remote Control (For PV-1530)
Audio 2-channel (For PV-1530)
Up to Eight-hour recording
Extended Timer One Touch Recording



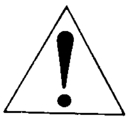
CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL



This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.



This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included.
Therefore, it should be read carefully in order to avoid any problems.

DESCRIPTION OF CONTROLS

TOP and FRONT

• EJECT BUTTON
Push this button to remove the cassette. "■" flashes on the Multi Function Display while the tape is being ejected.

• CASSETTE COMPARTMENT
Slide the cassette into the unit until the mechanism draws it in automatically. When a cassette is already installed, a mechanical stop is present.
Therefore, do not force a cassette into this compartment.

• CASSETTE WINDOW
The condition of the cassette can be observed through this window.

• MULTI FUNCTION DISPLAY

• UHF/VHF/CATV TUNING CONTROLS (INNER DOOR)
Used to adjust each channel position for desired channel.

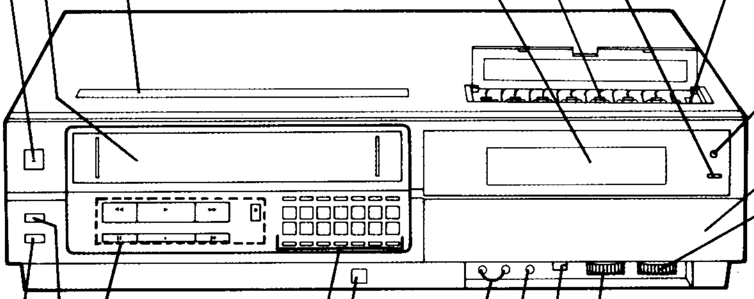
• RESET BUTTON
Pushing this button causes the Tape Counter to return to "0000". By beginning the recording at "0000", subsequent playback will be more convenient.

• AUTOMATIC FINE TUNING (AFT) SWITCH (INNER DOOR)
Under normal conditions, turn the AFT Switch "ON".

• DOLBY NR INDICATOR (For PV-1530)
When DOLBY NR Switch is ON, Indicator light goes on.

• INNER PANEL (FRONT)
(See Next page)

• TRACKING CONTROL
Use this control during regular playback if the image is partially obscured by bands of noise.



• Push Button Controls
(See next page).

• SLOW TRACKING CONTROL
Tracking control for use with slow-motion playback.

• TAPE-SPEED SELECTOR (SP/LP/SLP)
Set this selector for the desired tape speed of a recording.

• HEADPHONES JACK (For PV-1530)
For connecting a Headphone.

• MICROPHONE INPUT JACK (L/R) (For PV-1530)
For connecting a Microphone. This is useful for recording and audio dubbing. (PV-1525: One channel)

• WIRELESS REMOTE SENSOR (For PV-1530)
Receives signal from Wireless Remote Control.

• CHANNEL SELECTOR BUTTONS/INDICATOR LIGHTS
Select the channel (2 ~ 83, A ~ W, A-2, A-1) you wish to view or record by pushing any one of these 14 buttons.

• POWER BUTTON
This button is used to turn the VCR on and off. When this button is pushed, counter appears on the Multi Function Display.

• VCR/TV SELECTOR
VCR: To monitor video recordings or to view playback.
TV: To watch TV or to view another program while recording a different program.
When this is set to VCR, "VCR" appears on the Multi Function Display.

DESCRIPTION OF CONTROLS (CONTINUED)

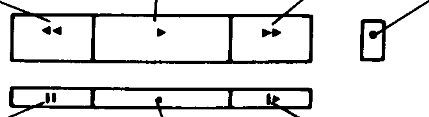
PUSH BUTTON CONTROLS

- **REWIND/SEARCH ◀◀ BUTTON**
  Push this button to rewind tapes. "REW" and " ◀ " appear on the Multi Function Display. During the playback mode, holding this button down will allow you to view the picture in reverse rapidly. " ◀ " flashes.

- **PLAY BUTTON**
  Push this button to play back recorded tapes. "PLAY" and " ▶ " appear on the Multi Function Display.

- **FAST FORWARD/SEARCH ▶▶ BUTTON**
  Push this button to move the tape forward rapidly. "FF and " ▶ " appear on the Multi Function Display. During the playback mode, holding this button down will allow you to view the picture in the forward direction rapidly. " ▶ " flashes.

- **RECORD BUTTON**
  Recording is started by pushing this button and the PLAY Button at the same time. "REC" and " ▶ " appear on the Multi Function Display.



- **PAUSE/STILL BUTTON**
  Push this button to temporarily stop the tape movement in either the recording or playback mode. During playback, a still picture is produced when the pause is used. Push again to release pause. When this button is pushed, "PLAY" and " ■ " appear on the Multi Function Display.

- **STOP BUTTON**
  Push this button to stop the tape. " ■ " appears on the Multi Function Display.

- **SLOW BUTTON**
  While viewing a still picture, push this button to advance the picture one frame at a time. " ▶ " flashes. During the playback mode, pushing this button will allow you to view a slow-motion picture. "SLOW" appears on the Multi Function Display.

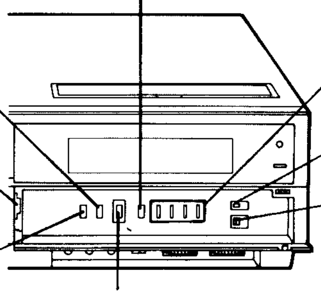
INNER DOOR

- **AUDIO DUB BUTTON**
  When this button and PLAY Button are pushed simultaneously, sound from another source can be recorded on the tape in place of the original sound. (The original sound will be erased.)

- **CHANNEL NUMBER HOLDER**
  Pull it out for changing channel tabs.

- **MEMORY BUTTON**
  When this button is in the "ON" position, the tape will stop when the Tape Counter reaches "0000" during rewind.

- **TIMER BUTTON**
  This button is used to put the VCR in Unattended Recording mode after programming functions have been completed.
  When this button is ON, " ⏲ " appears on the Multi Function Display, and you will not be able to operate the unit manually.



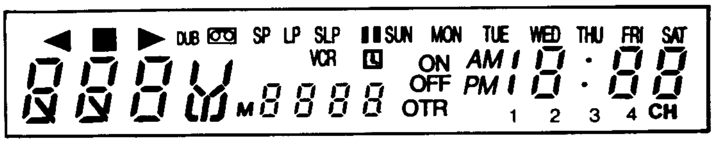
- **ONE TOUCH RECORD (O.T.R.) BUTTON**
  One Touch Recording enables you to do impromptu recordings at any time. Just select the channel and push the ONE TOUCH RECORD Button for 30 minutes to 4 hours of recording.

- **TIMER CONTROLS**
  Used to set the clock or to set the Timer to make an Unattended Recording when you are away from home, busy or asleep.

- **DOLBY NR SWITCH** (For PV-1530)
  Set this switch to ON for audio noise reductions. Indicator lights when ON.

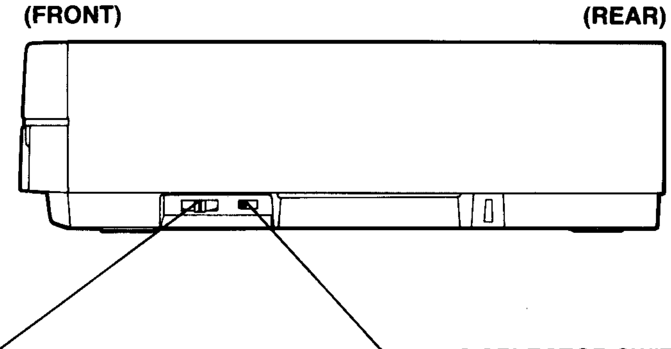
- **INPUT SIGNAL SELECTOR**
  (For PV-1530)
  LINE: For re-recording, audio dubbing or camera recording.
  TUNER: For regular TV recording with monaural sound recording.
  AUDIO 2 CH: For Simulcast (stereo) recording.

INDICATOR PANEL



- **DIGITAL CLOCK**
  Normally, the present time is displayed.
- **TAPE COUNTER**
  Tape counter number is displayed.
- **FUNCTION INDICATOR “ 888W ”**
  This shows the mode of VCR (EJECT, PLAY, REC, REW, FF, PAUSE, STILL, SEARCH, STOP, FRAME ADVANCE, SLOW).
- **DEW INDICATOR “ dEW ”**
  This indicator appears if excessive moisture condenses in the unit. If the DEW Indicator is ON, the unit will not operate. If this happens, leave the VCR ON and let it remain at room temperature until this indicator goes off.
- **TIMER INDICATOR “ ⏲ ”**
  When TIMER Button is set to ON, this indicator appears and you will not be able to operate the unit manually.
- **PROGRAM NUMBER “1”, “2”, “3”, or “4”**
  This shows the program number for Timer Recording.
- **CHANNEL INDICATOR “CH”**
  This indicator flashes when selecting channel for Timer Recording.
- **O.T.R. INDICATOR “OTR”**
  When OTR is set, this indicator appears.
- **MEMORY INDICATOR “M”**
  When MEMORY Button is set to ON, this indicator appears.
- **DUBBING INDICATOR “DUB”**
  When audio dubbing is set, this indicator appears.
- **VCR/TV INDICATOR “VCR”**
  This indicator appears when the VCR/TV Selector is set to VCR.
- **SPEED INDICATOR “SP”, “LP”, “SLP”**
  This shows the tape speed during recording and playback.
- **CASSETTE-IN INDICATOR “ 📼 ”**
  This indicator shows the condition of the cassette tape in the unit.
  No “📼”: There is no cassette in the unit.
  “📼”: There is a cassette in the unit and some interval to the end of the tape.
  Flashing “📼”: The automatic rewind took place at the end of tape during playback, recording or fast forward. The indicator continues flashing until the subsequent mode is set.

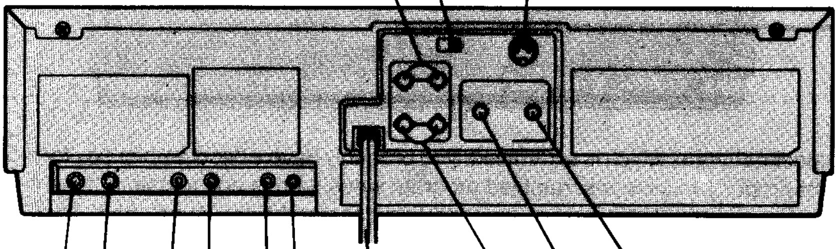
SIDE



- **PICTURE CONTROL**
  Use this control to make the picture softer or sharper, whichever you prefer.
- **AUDIO SELECTOR SWITCH** (For PV-1530)
  This switch is used to select the audio signal for the TV speaker.

REAR

- **RF CONVERTER CHANNEL SELECTOR**
  Set to channel 3 or 4, whichever is not used in your area.
- **UHF ANTENNA OUTPUT TERMINALS (TO TV SET)**
  Connect these terminals to the UHF antenna terminals on the TV.
- **AUXILIARY CONNECTOR**
  If you are using the optional PV-CT2 CATV Adaptor, connect the VCR Remote Control cord of the CATV Adaptor/PV-CT2 (optional) to this connector.



- **VHF ANTENNA OUTPUT TERMINAL (TO TV SET)**
  Connect this terminal to the VHF antenna terminal on the TV.
- **VHF ANTENNA INPUT TERMINAL (FROM ANTENNA)**
  Connect the VHF antenna to this terminal.
- **AC POWER CORD**
  Connect to a 120 V 60 Hz AC outlet.
- **UHF ANTENNA INPUT TERMINALS (FROM ANTENNA)**
  Connect the UHF antenna to these terminals.
- **REMOTE JACK** (For PV-1530)
  For connection to the Wired Remote Control.
- **CAMERA REMOTE JACK**
  For connection to the Remote Pause Jack of the optional camera.
- **AUDIO INPUT CONNECTOR**
  For connection to a portable video camera or another VCR.
- **VIDEO INPUT CONNECTOR**
  For connection to another VCR or a portable video camera.
- **AUDIO OUTPUT CONNECTOR**
  For connection to a monitor TV, another VCR or an audio tape recorder.
- **VIDEO OUTPUT CONNECTOR**
  For connection to a monitor TV or another VCR.

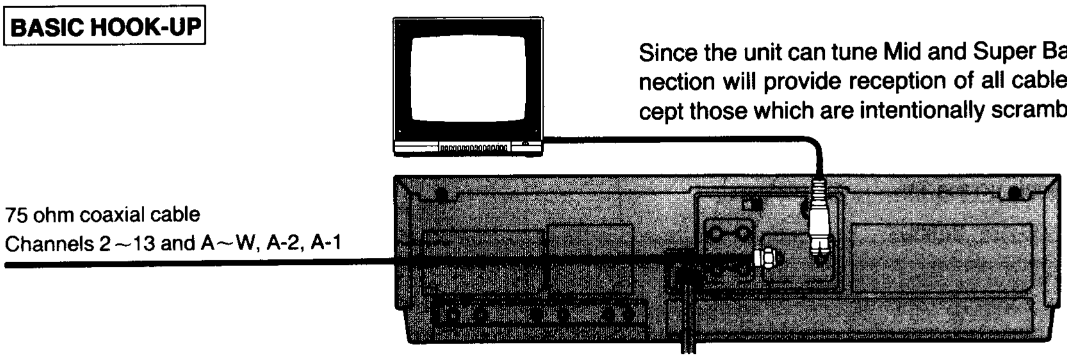
In some cases, the product may differ slightly from illustrations or photographs.
Please be assured that this difference is not due to mistake but to ongoing product improvement.

CABLE CONNECTIONS

CABLE–VCR–TV (FOR CATV/PAY CHANNELS RECORDING/PLAYBACK)

The unit has an extended range, and can tune the Mid-Band and Super-Band cable channels. (Channels A ~W, A-2, A-1). Also, the unit can tune to any of the 70 UHF channels (14~83). Refer to VCR FINE TUNING.

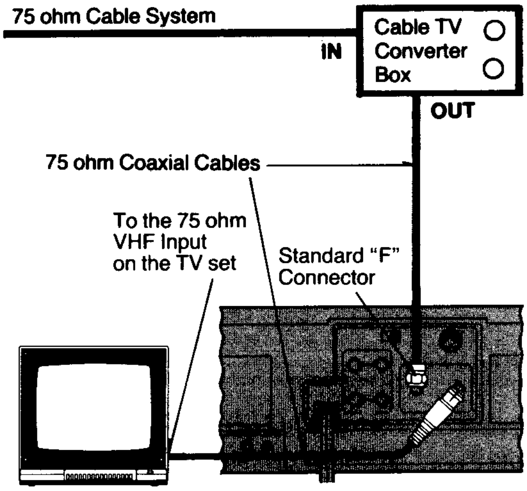
BASIC HOOK-UP


75 ohm coaxial cable
Channels 2~13 and A~W, A-2, A-1

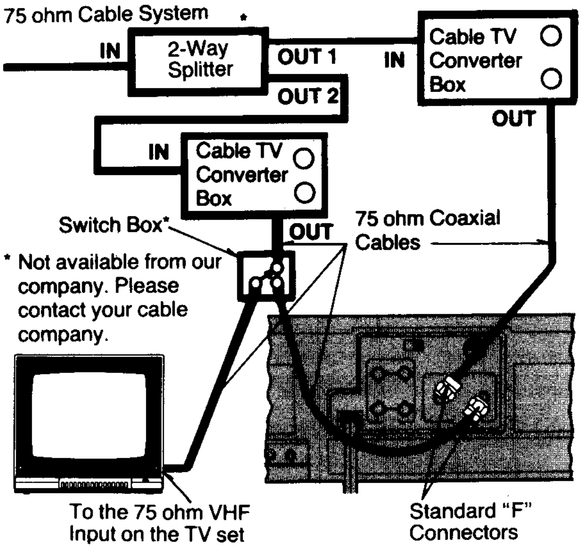
Since the unit can tune Mid and Super Bands, this connection will provide reception of all cable channels except those which are intentionally scrambled.

However, if you subscribe to a special channel which is scrambled–you probably have a descrambler box for proper reception. The unit by itself cannot properly receive a scrambled program since it does not contain a descrambler. In order for the unit to properly receive a scrambled program, your existing descrambler must be used. There are two commonly used methods of connection in this case.

TYPICAL CABLE SYSTEM HOOK-UPS WITH CABLE CONVERTER/DESCRAMBLER BOXES


75 ohm Cable System
IN
Cable TV Converter Box
OUT
75 ohm Coaxial Cables
To the 75 ohm VHF Input on the TV set
Standard "F" Connector

The above cable hook-up allows VCR-TV functions except for viewing one channel while recording another.


75 ohm Cable System
IN
2-Way Splitter
OUT 1
OUT 2
IN
Cable TV Converter Box
OUT
IN
Cable TV Converter Box
OUT
Switch Box*
75 ohm Coaxial Cables
To the 75 ohm VHF Input on the TV set
Standard "F" Connectors

* Not available from our company. Please contact your cable company.

The above cable hook-up allows VCR-TV functions, including viewing one channel while recording another, but it requires two cable TV Converter Boxes, one Switch Box and one 2-Way Splitter.

Since the unit has an extended range of tuning, tuning-programming of non-scrambled Mid-Band and Super-Band TV programs is possible. When a cable converter or descrambler box is connected to the unit, all Unattended Recording functions will continue to operate with the exception of changing channels automatically. Channel selection will have to be performed with the cable converter. Unattended Recording is therefore limited to one channel at any given time.

- Using the CATV Adaptor/PV-CT2 and the cable descrambler box:
  All functions (e.g. Timer Recording, Recording one channel while watching another) will be operable for both regular TV channels and one pay TV channel. If you use the PV-CT2, refer to the Operating Instructions of the PV-CT2.

Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

GLOSSARY OF TERMS

ACC

Automatic Color Control used to maintain an overall constant color signal level in the color circuits.

ACK

Automatic Color Killer.

Adjacent Track

This is the name of the video track to the immediate left or right of the track of concern.

AFC

Automatic Frequency Control used to phase-lock the color circuits to either the recording or playback color signal, in order to achieve a stable color signal.

AFT

Automatic Fine Tuning...This is a special circuit found in most recent TV sets which makes the local oscillator of the TV tuner follow the channel of concern in order to produce a stable IF frequency. In other words, if for any reason the TV station being received changes frequency, the AFT circuit will automatically compensate so that no interference will be seen on the screen, i.e., no manual fine tuning is necessary.

AGC

Automatic Gain Control used to maintain an overall constant picture level in the luminance circuits.

APC

Automatic Phase Control used to help phase lock the color circuits to either the recording or playback color signal in order to achieve a stable color signal.

Azimuth

A term used to describe the left to right tilt of the gap of a recording head, if it could be viewed straight on.

Balanced Modulator

A circuit so designed to give as an output the frequency sum or frequency difference of its two input signals. Any special characteristics of one of the input signals will be present in the output signal.

Beats

A term used to described the unwanted signals produced when two original signals are allowed to be mixed together.

Bipolar PG

Pulse Generator signals that have both positive and negative excursions.

Burst

A short time occurence (8 to 10 cycles) of the 3.58MHz subcarrier signal, appearing right after horizontal sync but centered on the blanking portion of the video waveform. Burst is used to keep the color oscillator of a TV receiver locked to the broadcast station.

B/W

Abbreviation for Black and White.

C

Capacitor.

C Signal

The color portion of a video signal.

Capstan

A small rotating metal dowel which drives the recording tape to assure positive tape movement.

Chroma

The color portion of a video signal.

Chrominance

The color portion of a video signal.

Clamp

The process of giving an AC signal a specific DC level.

Control Signal

A special signal recorded onto the video tape which is used during playback as a reference for the servo circuits.

Converted Subcarrier

This is the process of frequency shifting the color 3.58MHz subcarrier and its sidebands down to 629kHz.

Crosstalk

The name given to the unwanted signals obtained when a video head picks up information from an adjacent track.

CUE

To scan the playback picture at a faster than normal speed in the Forward direction.

D

Diode.

DL

Delay Line.

Dark Clip

After emphasis, the negative going spikes (undershoot) of a video signal may be too large in amplitude for safe FM modulation. A dark clip circuit is used to cut off these spikes at an adjustable level.

DDC

Direct Drive Cylinder...as used in VHS, this means that the video heads are driven by a self-contained brushless DC motor using no belts or gears. DD cylinders produce pictures with better stability.

Delta Factor (Δf)

A term used to indicate that a playback signal off the video tape has some jitter or "wow and flutter". Δf, or "a change in frequency" means that the color signal off the tape is not a stable frequency of 629kHz, but rather a signal whose frequency at any instant is some small amount above or below 629kHz.

Deviation

A term used to describe how far the FM carrier swings when it is modulated. In VHS the upper limit is 4.4MHz.

Dew Detector

A variable resistor whose resistance value depends upon the ambient humidity.

Dihedral

A term used to describe the relative position between the two video heads as they are mounted in the head cylinder. Perfect dihedral means that the tips of the heads are exactly 180° apart.

Dropout

A momentary absence of FM or color signal off the tape, whether due to uneven oxide or a coating of dust on the tape or video heads.

Duty Cycle

In describing a rectangular waveform, the "duty" refers to the percentage of off time and on time for one complete cycle. 50—50 means that there are equal periods of off time and on time for one cycle and this would be a square wave.

E-E

Electronics to Electronics...this is the picture viewed on the TV set when a recording is being made. This picture goes through some but not all of the circuits of the recorder and is used to test the operation of said circuits.

EQ

Shortened form of "Equalization", used in the audio circuits.

Emphasis

The process of boosting the level of the high frequency portions of the video signal.

FG

Frequency Generator used in the servo circuits.

FL

Filter.

FM Signal

The luminance portion of the video signal is used to control the frequency of astable multivibrator. The output of this multivibrator is a frequency modulated (FM) signal shifting from 3.4 MHz to 4.4 MHz (plus sidebands).

Field

One half of a television picture. A field consists of 262.5 horizontal scanning lines across the picture tube. Two fields are necessary to complete a fully scanned TV picture (frame). First, one field is "sprayed" on the picture tube, starting at the top of the tube with Line 1, and ending at the bottom with Line 262.5. Then, the next field begins at the top of the tube again with Line 262.5 and ends at the bottom with Line 525. The lines of the second field lie in-between the lines of the first field. This property of falling in-between lines is called "interlacing". The two sweeps of the picture tube, or two fields make up one complete TV picture of "frame". Frame repetition is 30 Hz, therefore field repetition is 60 Hz.

Flagwaving

This is the term used to describe a TV sets ability to accept unstable playback pictures from a video tape recorder. All home VTR's have some degree of playback instability. A TV set with a long horizontal AFC time constant may not recover from the VTR's instability before the active picture is being scanned. This can cause a bending or flapping from side to side of the top inch or so of the screen. This movement is called "flagwaving".

Frame

One complete TV picture. See "Field".

Gate

A circuit which will deliver an output only when a specific combination of its inputs are present. For use in analog or digital applications.

Guard Band

This is the space between video tracks on the video tape in the SP mode. Guard bands contain no information.

Hall Effect IC

An external magnetic field causes current to flow in this type of device.

HD

Horizontal Drive signal.

Head Cylinder

A cylindrical piece of metal which houses the video heads. The tips of the heads protrude slightly from the surface of the cylinder so that they may scan the tape as the cylinder spins.

Head Switching

The action of turning off during playback, the video head which is not in contact with the video tape. A particular video head will be turned off 30 times per second. This is done so that the head which is not scanning the tape, and therefore not delivering a good signal, cannot contribute any noise to the playback signal.

Head Switching Pulse

The signal which is applied to the Head Amplifier to perform head switching. This is a square wave at 30 Hz, with a 50—50 duty cycle.

Helical

A word used to describe a general type of VTR in which the tape wraps around the video head cylinder in the shape of a 3-dimensional spiral, or "helix". The video tracks are recorded as a series of slanted lines.

IC

Integrated Circuit.

Interchangeability

A term used to describe how well a particular VTR will play back a tape recorded on another VTR of the same type. Good interchangeability indicates good playback.

Interlacing

The property of the scan lines of two television fields to lie in-between each other. See "Field".

Interleaving

A term used to indicate that the harmonics of the chrominance signal lie in-between the harmonics of the luminance portion of the video signal as it is viewed on a spectrum analyzer. This means that the color information of a video signal does not interfere with, although it is broadcast at the same time as, the luminance information.

Also, signals which have this interleaving property are not readily seen on a TV screen, because of their virtual cancellation characteristics.

Interleaving signals (fi) must have the following frequency relationship:

$$fi = \left(\frac{2n+1}{2}\right) \times fH \quad (n = 0, 1, 2, 3, 4......)$$

$$fH = 15{,}734\,\text{Hz} \text{ (H sync frequency)}$$

Jitter

The name of the effect on the playback picture if a VTR has too much "wow and flutter". The picture appears to have a rapid shaking movement.

L

Coil.

Luminance

This is the portion of video signal which contains the sync and B/W information.

MMV

Monostable Multi-Vibrator...Usually an IC device which gives a logic high or low output with a variable duration upon receipt of an input pulse or transition.

Non-Linear Emphasis

This is similar to regular emphasis with the difference that small level high frequency portions of the signal are given more of a boost than higher level high frequency portions.

NTSC

The National Television Systems Committee. These four letters identify the United States color television standard.

O.T.R.

One Touch Recording (O.T.R.) enables you to do impromptu timer recordings at any time. When you have to go out for urgent matters or you are going to sleep, this function is very useful. Just select the channel and push the O.T.R. Button for 30 minutes to 2 hours of recordings. After recording, the VCR will be turned off automatically.

PG

Pulse Generator used in the servo circuits.

Q

A term used to describe the graphic response of a filter or tuned amplifier.

R

Resistor.

Review

To scan the playback picture at a faster than normal speed in the Reverse direction.

RF

Radio Frequencies.

Rotary Chroma

The name of the process used in VHS to change the phase of the chrominance signal at a rate of 15,734 (same as H sync frequency) times per second.

Rotary Transformer

A device used to magnetically couple RF signals to and from the spinning video heads, thus eliminating the need for brushes.

Sample and Hold

A process used in comparator circuits by which the value of a particular signal is measured at a specific moment in time...then this value is stored for later use.

Search

To scan the playback picture at a faster than normal speed in either the forward or reverse direction.

Servo

Short for Servo mechanism. This is an electro-mchanical device whose mechanical operation (for instance motor speed) constantly being measured and regulated so that it closely matches or follows an external reference.

Skew

Another way of saying Tension Error. Skew is actually the change of size or shape of the video tracks on the tape from the time of recording to the time of playback. This can occur as a result of poor tension regulation by the VTR, or by ambient conditions which affect the tape.

Subcarrier

The name of the 3.58MHz continuous wave signal used to carry color information.

SS

Slow and Still.

T

Transformer.

TP

Test Point.

TR

Transistor.

Tension Error

See "Skew".

Time Base Stability

A term used to describe how closely the playback video signal from a VTR matches an external reference video signal...in regard to sync timing rather than picture content.

Tracking

This is the action of the spinning video heads during playback when they accurately track across the video RF information laid down during recording. Good tracking indicates that the heads are positioning themselves correctly, and are picking up a strong RF signal. Poor tracking indicates that the heads are off track, and picking up low level RF signal or noise.

VCO

Voltage Controlled Oscillator...An oscillator whose frequency of oscillation is governed by an external voltage.

Video Head

This is the electro-magnet used to develop magnetic flux which will put RF information on the tape. In VHS, two video heads are mounted in a rotating cylinder around which the video tape is wrapped. As the cylinder spins, each video head is allowed to alternately scan the tape.

Video Track

The name of the RF information laid down during recording, as a particular video head scans across the tape.

VHS

Video Home System.

VTR

Video Tape Recorder.

VV

Video to Video...or...the actual playback picture produced from a tape during playback.

VXO

Voltage Controlled Crystal Oscillator...Similar to VCO except that a quartz crystal is sued as a reference which can be varied.

White Clip

After emphasis, the positive going spikes (overshoot) of the video signal may be too large for safe FM modulation. A white clip circuit is used to cut off these spikes at an adjustable level.

XTAL

Abbreviation for crystal.

Y Signal

The B/W portion of a video signal containing B/W information and sync.

ORDER NO. VRD-8404-569
B3

Service Manual

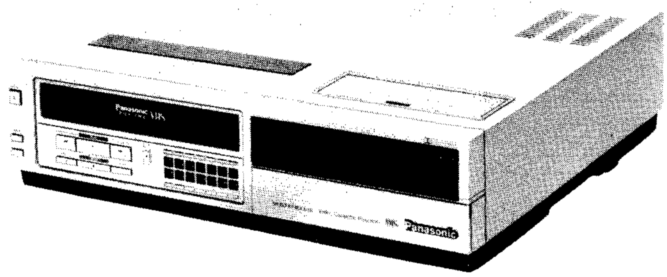
Video Cassette Recorder

Panasonic
Omnivision **VHS**

PV-1530
PV-1525

Vol. 2

Mechanical Adjustment Procedures
Electrical Adjustment Procedures



SPECIFICATIONS

Power Source: 120V AC ±10%, 60Hz ±0.5%
Power Consumption: Approx. 22 watts
Television System: EIA Standard (525 lines, 60 fields)
NTSC color signal
Video Recording System: 4 rotary heads, helical scanning system
Luminance: FM azimuth recording
Color signal: Converted subcarrier phase shift recording
Audio Track: 2 track (PV-1525: 1 track)
Tape Format: Tape width 1/2″ (12.7mm), high density tape
Tape Speed: SP mode: 1-5/16 i.p.s. (33.35mm/s)
LP mode: 21/32 i.p.s. (16.67mm/s)
SLP mode: 7/16 i.p.s. (11.12mm/s)
Record/Playback Time: 8 HRS. with 160 min. type tape used in SLP mode
FF/REW Time: Less than 6 min. with 120 min. type tape
Heads: Video: 4 rotary heads
Audio/Control: 2 stationary head
(PV-1525: 1 stationary head)
Erase: 1 full track erase
1 audio track erase
Input Level: Video: VIDEO IN Jack (RCA type)
1.0Vp-p, 75Ω unbalanced
Audio: AUDIO IN Jack (RCA type)
(Right, Left)
−20dB, 50kΩ unbalanced
MIC IN jack (M6) (Right, Left)
−70dB, 4kΩ unbalanced
PV-1525: MIC IN jack (M3)
−70dB, 4kΩ unbalanced
TV Tuners: VHF Input: VHF Ch2-Ch13, cable channels "A"~"W", "A-2", "A-1" 75Ω unbalanced
UHF Input: Ch14-Ch83, 300Ω balanced
Output Level: Video: VIDEO OUT Jack (RCA type)
1.0Vp-p, 75Ω unbalanced
Audio: AUDIO OUT Jack (RCA type)
(Right, Left)
−9dB, 1kΩ unbalanced
PV-1525: −6dB, 600Ω unbalanced
RF Modulated: Ch3/Ch4 switchable,
72dBμ, (Open Voltage)
75Ω unbalanced
Video Horizontal Resolution: Color: more than 230 lines
B/W: more than 230 lines
Audio Frequency Response (10dB down): SP mode: 100Hz ~ 8kHz
LP mode: 100Hz ~ 6kHz
SLP mode: 150Hz ~ 5kHz
Signal-to-Noise Ratio: Video: SP mode: better than 41dB
LP mode: better than 41dB
SLP mode: better than 41dB
(Rohde & Schwarz noise meter)
Audio: SP mode: better than 42dB
LP mode: better than 40dB
SLP mode: better than 40dB
Operation Temperature: 41°F—104°F (5°C—40°C)
Operating Humidity: 10%—75%
Weight: 16.8 lbs. (7.6kg)
PV-1525: 15.7 lbs. (7.1kg)
Dimensions: 16-15/16″(W) × 14-5/16″(D) × 4-1/4″(H)
(430mm × 364mm × 108mm)
Accessories Supplied:
- Remote control unit (PV-1525)
- Wireless Remote control unit (PV-1530)
- VHF connecting cable
- 300Ω—75Ω transformer
- Twin-lead cable
- V-Lock Tool

Available Tapes: 1/2″ VHS video cassette tapes
NV-T160 Approx. 1073ft. (327m), 160, 320, or 480 min.
NV-T120 Approx. 810ft. (247m), 120, 240, or 360 min.
NV-T60 Approx. 417ft. (127m), 60, 120, or 180 min.

Weight and dimensions shown are approximate.

Specifications are subject to change without notice.

Panasonic®

Matsushita Engineering & Service Company
Division of Matsushita Electric
Corporation of America
50 Meadowland Parkway, Secaucus,
New Jersey 07094

Panasonic Hawaii Inc.
91-238 Kauhi St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Matsushita Electric
of Canada Limited
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
Ave, 65 De Infanteria, KM 9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

CONTENTS

SPECIFICATIONS ....Cover

SAFETY PRECAUTIONS 2- 1

MECHANICAL ADJUSTMENT PROCEDURES 2- 2
- DISASSEMBLY OF CABINET PARTS 2- 2
  1. DISASSEMBLY FLOWCHART 2- 2
  2. DETAILED DISASSEMBLY METHOD 2- 2
- ADJUSTMENT PROCEDURES 2- 5
  1. REPLACEMENT OF UPPER CYLINDER UNIT 2- 5
  2. REPLACEMENT OF D.D. CYLINDER UNIT 2- 6
  3. CONFIRMATION OF DISCHARGE ANGLE UNIT INSTALLATION POSITION 2- 7
  4. ADJUSTMENT OF V-STOPPERS 2- 7
  5. POSITION ADJUSTMENT OF TENSION POST 2- 7
  6. MEASUREMENT AND ADJUSTMENT OF BACK TENSION 2- 8
  7. CONFIRMATION OF BRAKE TORQUE 2- 9
  8. CONFIRMATION OF TAKEUP TORQUE 2- 9
  9. POSITION ADJUSTMENT OF SAFETY TAB SWITCH 2-10
  10. HEIGHT ADJUSTMENT OF REEL TABLES 2-10
  11. HEIGHT ADJUSTMENT OF TAPE GUIDE POSTS 2-11
  12. HEIGHT ADJUSTMENT OF P5 ARM UNIT 2-12
  13. TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT) 2-12
  14. ADJUSTMENT OF FG HEAD GAP 2-16
  15. CONFIRMATION/ADJUSTMENT OF THRUST GAP 2-16
  16. ADJUSTMENT OF CAM GEAR AND MODE SELECT SWITCH 2-17
  17. ADJUSTMENT OF CASSETTE UP GEARS 2-19
  18. ADJUSTMENT OF CASSETTE UP/DOWN SWITCH 2-22

SERVICING FIXTURES & TOOLS 2-23

ELECTRICAL ADJUSTMENT PROCEDURES 2-24

SERVICE CAUTION 2-24
1. TEST EQUIPMENT 2-25
2. ADJUSTMENT PROCEDURES 2-25
   - 2-1. SERVO SECTION 2-25
   - 2-2. AUDIO SECTION 2-28
   - 2-3. LUMINANCE AND CHROMINANCE SECTION 2-31
   - 2-4. SYSTEM CONTROL SECTION 2-36
   - 2-5. TV DEMODULATOR SECTION 2-37
   - 2-6. IR WIRELESS RECEIVING DETECTOR SECTION 2-41

LOCATION OF TEST POINTS AND ADJUSTMENT POINTS 2-42

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are shaded on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.
4. USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ.
   When the exposed metal does not have a return path to the chassis, the reading must be ∞.

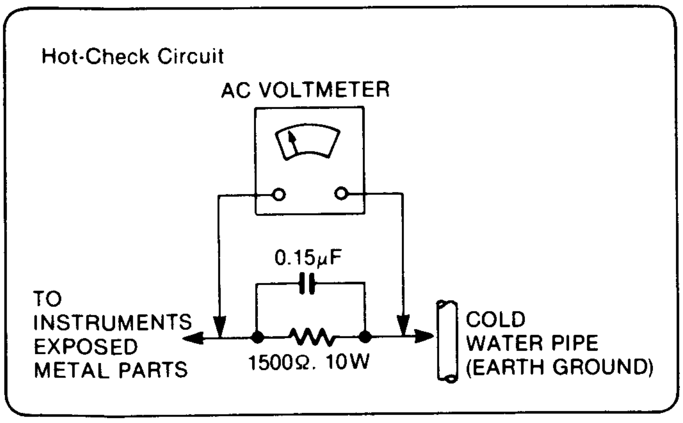

Hot-Check Circuit
AC VOLTMETER
0.15μF
TO INSTRUMENTS EXPOSED METAL PARTS
1500Ω. 10W
COLD WATER PIPE (EARTH GROUND)

Figure 1

LEAKAGE CURRENT HOT CHECK (See figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15μF capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

MECHANICAL ADJUSTMENT PROCEDURES

DISASSEMBLY OF CABINET PARTS

1. DISASSEMBLY FLOWCHART

This flowchart indicates disassembly steps of the cabinet parts and the P. C. Boards in order to find the item(s) necessary for servicing.
When reassembling, perform the step(s) in the reverse order. Bottom Plate can be removed separately.

Note:
1. When removing the front panel, work with care so as not to break the locking portions of the panel.
2. The 3 screws indicated by arrow marks on the bottom plate should be removed to remove the top case.

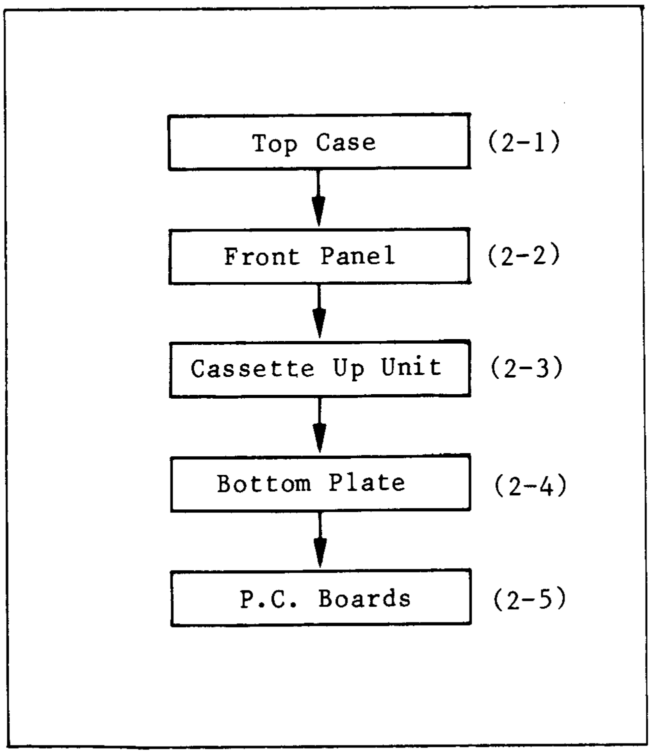


Fig. M1 Disassembly Flow Chart

2. DETAILED DISASSEMBLY METHOD

2-1. Removal of the Top Case

Place the deck so that the left side faces down, hold the deck with your hand and remove 3 screws (A).

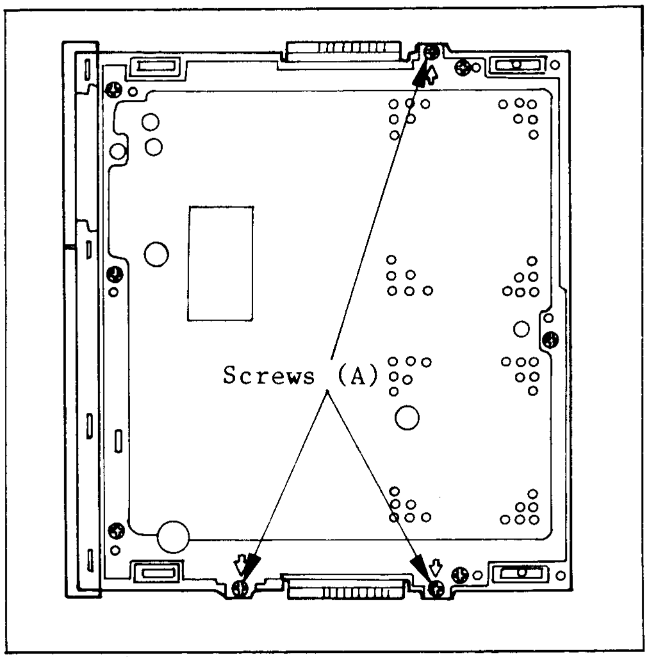


Fig. M2-1 Removal of Top Case

Remove 2 screws (B).
Then pull the top case toward the back and then carefully lift the front portion to remove.

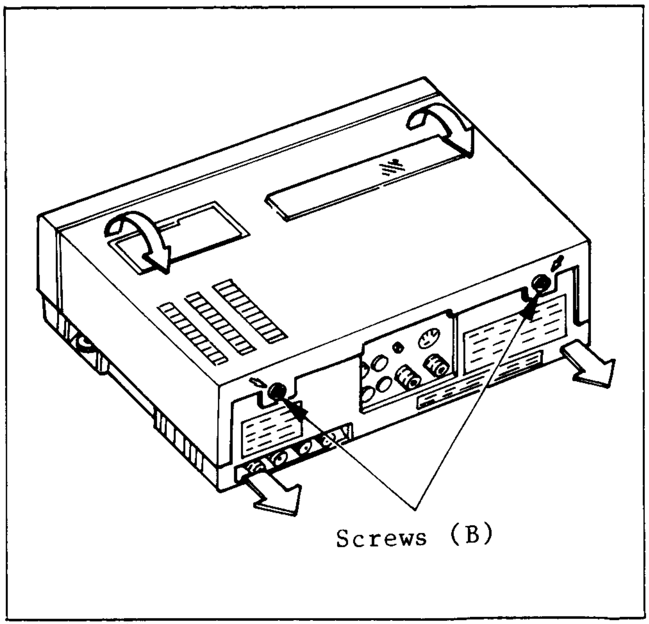


Fig. M2-2 Removal of Top Case

2-2. Removal of the Front Panel

Release 3 locking tabs. Then hold both right and left top portions of the panel and turn it towards the front of deck to remove.

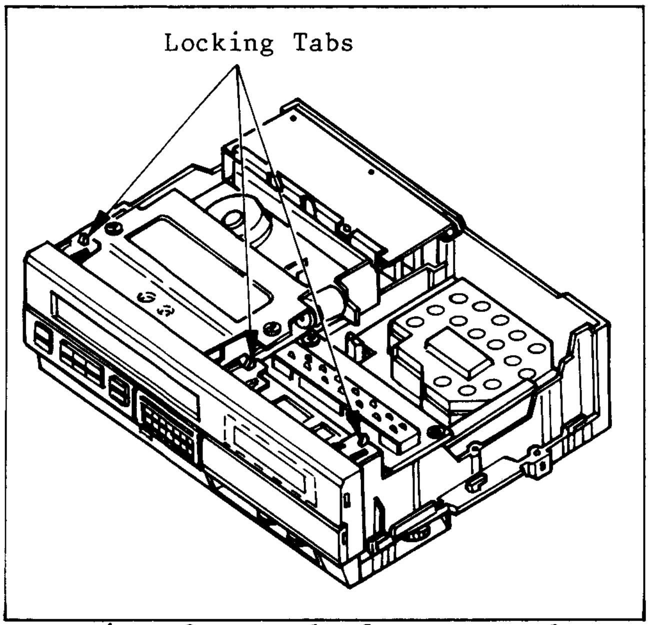


Fig. M3 Removal of Front Panel

2-3. Removal of the Cassette Up Unit

Remove 3 Screws (C) and unplug the connector P1551 on Connection C.B.A.
Then remove Cassette Up Unit.
First slightly lift the left side of Cassette Up Unit and then lift right side of Cassette Up Unit.

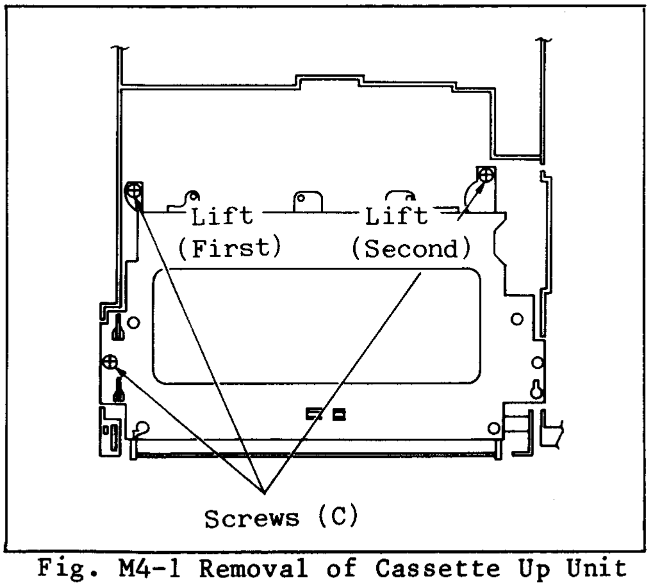


Fig. M4-1 Removal of Cassette Up Unit

2-3-1. Cassette Holder Down Position without Cassette Tape

The cassette Holder in down position without cassette tape should be done according to the following procedures for some adjustments.

1. Turns the power sw ON.
2. Insert 2 screwdrivers into the Cassette Up Unit from the front, positioning them right and left, as shown in (A) and (B) in Fig. M4-2. The screwdrivers should keep both side holder guide levers in the unlock position. By pushing down while pushing toward the rear on the Holder unit, the loading action will begin. Continue this pressure and screwdriver position until the Cassette Holder Unit clears the 3 locking tabs. After clearing the locking tabs the Cassette Up unit will move into the down position by itself.

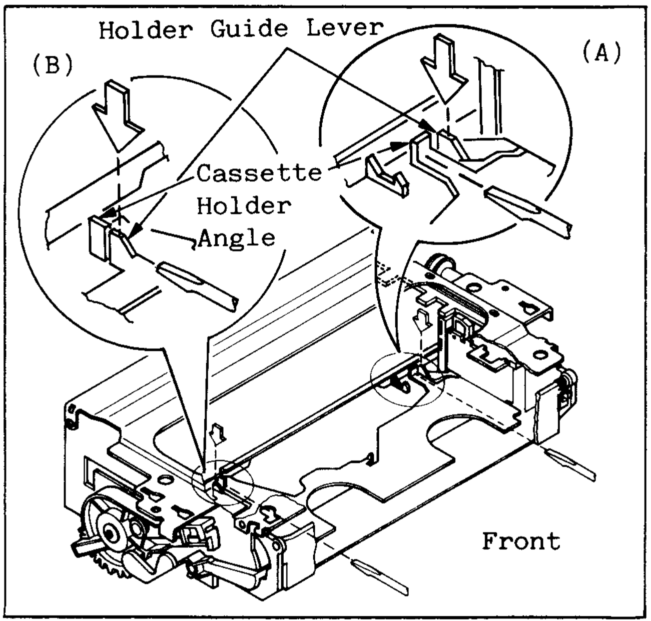


Fig. M4-2 Cassette Down Condition Without Cassette Tape

3. Connect TP6005 and GND on System Control Section through a jumper wire.
4. After the adjustment, remove the jumper wire.

Note :

When TP6005 and GND are connected through a jumper wire, Eject can be performed but not Cassette Loading.

2-4. Removal of the Bottom Plate

Place the deck so that the left side faces down, hold the deck with your hand and remove 6 screws (D).

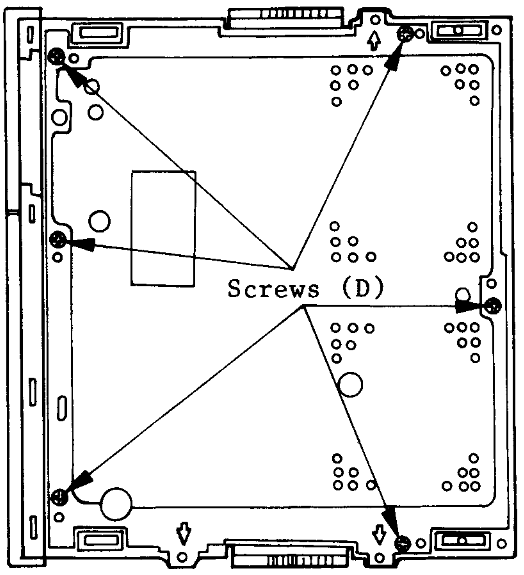


Fig. M5 Removal of Bottom Plate

2-5. Opening of the P.C. Boards (Bottom, Signal Process)

Place the deck so that the left side faces down, hold the deck with your hand.

2-5-1. Servo /Sub Audio /System Control C.B.A.

Remove 5 red screws (E) and Locking Tab.

Then open the Servo /Sub Audio /System Control P.C. Board.

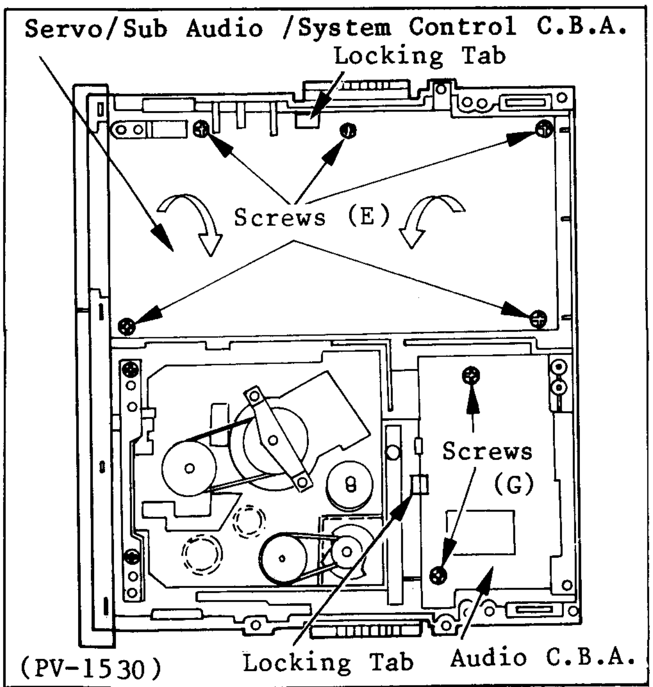

Servo/Sub Audio /System Control C.B.A.
Locking Tab
Screws (E)
Screws
(G)
(PV-1530)
Locking Tab
Audio C.B.A.

Fig. M6 Opening of P.C. Board

2-5-2. Signal Process C.B.A.

1. Disconnect the AC plug from the AC outlet.
2. Place the deck so that the left side faces down, hold the deck with your hand and remove 2 screws (G) and Locking Tab on the Audio C.B.A. Then open the Audio C.B.A.
3. Remove the screw and jumpers on the U/V Tuner Unit from bottom side.
4. Remove the 5 red screws (F).
5. Lift Signal Process C.B.A. Slightly and then turn the C.B.A. to set it as shown in Fig M8.
6. Remove the Top Cover Support Angle.

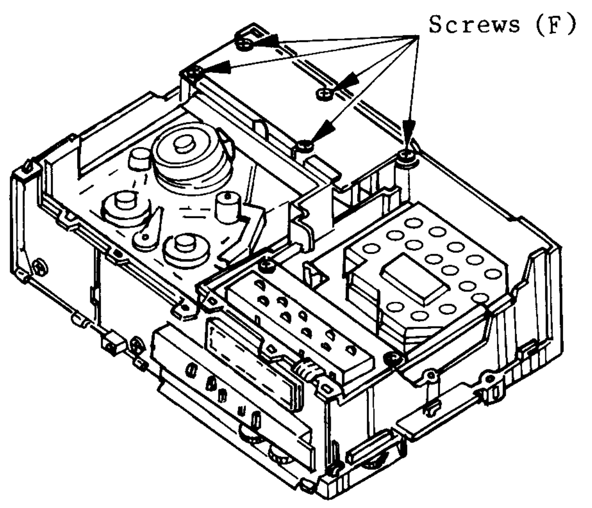


Fig. M7 Opening of P.C. Boards

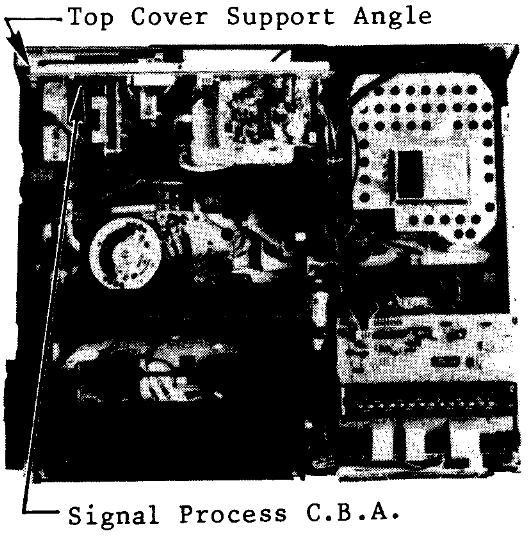

Top Cover Support Angle
Signal Process C.B.A.

Fig. M8 Setting of Signal Process C.B.A.

Note :

Be careful lest the surrounding wires should be damaged.

PROCEDURE FOR CLEANING OF UPPER CYLINDER UNIT

. Position the video head to permit access for cleaning and hold the upper cylinder to keep it from turning while cleaning.

. Gently rub the video head in direction of tape travel with Head Cleaning Stick (VFK27) moistened with freon TF.

. Repeat for the other video head.

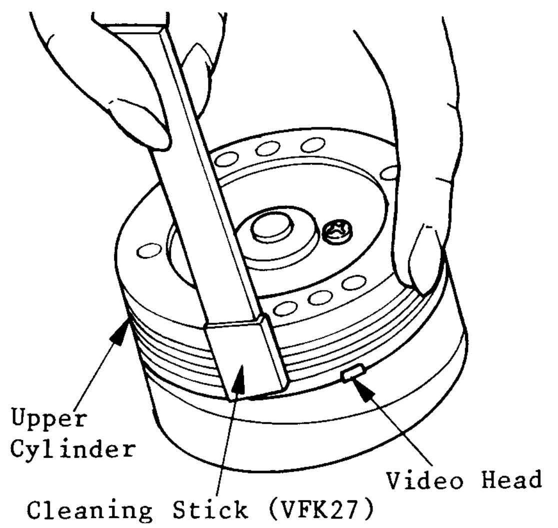


Fig. M9 Head Cleaning

te:

. Do not rub vertically.

. Do not apply any pressure to head. If contaminant is not easily removed, continued gentle wiping will usually remove the substance.

. After claering play a new tape for at least 10 minutes.

ADJUSTMENT PROCEDURES

. REPLACEMENT OF UPPER CYLINDER UNIT

rk with extreme care when removing or placing the Upper Cylinder Unit.
 not touch video heads during rvicing.

. Unsolder the 8 lead pins on the Head Relay Board.

. Remove the 2 screws and gently lift the Upper Cylinder Unit from the shaft.

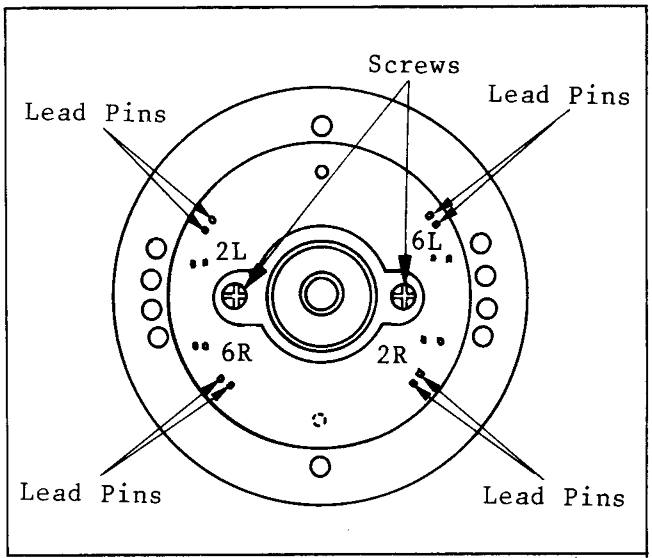


Fig. M10-1 Replacement of Upper Cylinder Unit

3. Before reinstalling a new unit, clean the D.D. Cylinder shaft and the surface that it engages with on the Upper Cylinder with a soft cloth dampened with Freon TF.

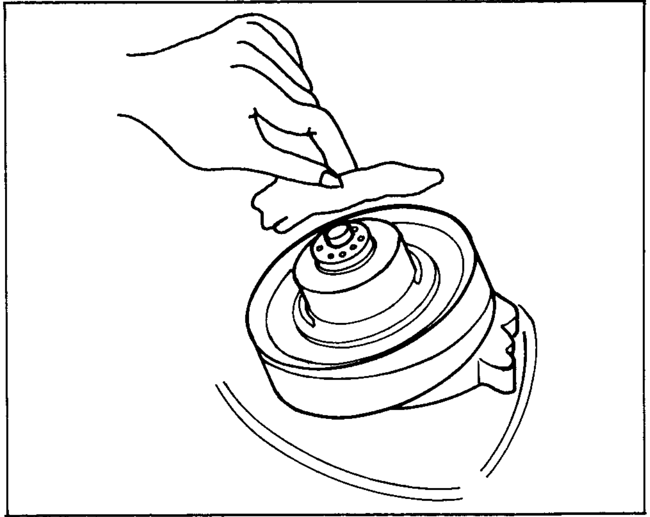
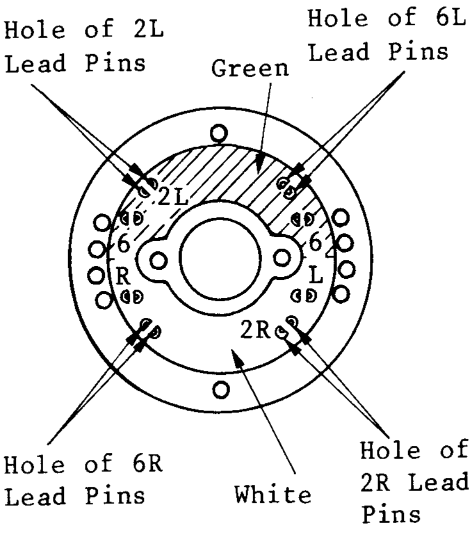


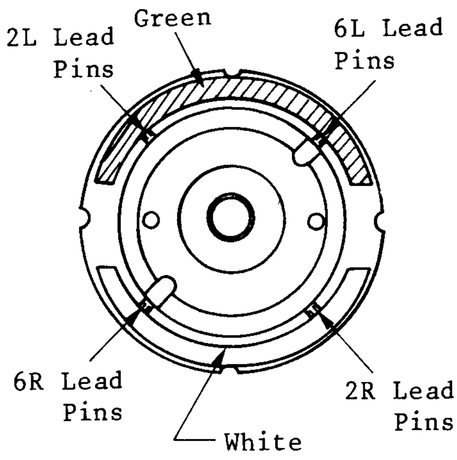
Fig. M10-2 Replacement of Upper Cylinder Unit

4. Install new Upper Cylinder Unit carefully so that the 8 lead pins are properly matched on the Head Relay Board.
   For details on the installation position, refer to Fig. M10-3.

Note :
Install the 8 lead pins with extreme care so as not to damage them.

<table>
<tr><td>Upper Cylinder</td><td>

Hole of 2L Lead Pins
Green
Hole of 6L Lead Pins
2L
6
R
6
2
L
2R
Hole of 6R Lead Pins
White
Hole of 2R Lead Pins

Set the upper cylinder so that color of P.C.B on upper cylinder meets color of P.C.B. on DD cylinder (White-White, Green-Green).</td></tr>
<tr><td>D.D. Cylinder Unit</td><td>

2L Lead Pins
Green
6L Lead Pins
6R Lead Pins
2R Lead Pins
White

</td></tr>
</table>

Fig. M10-3 Replacement of Upper Cylinder Unit

5. Tighten the 2 screws and resolder the 8 lead pins to the Head Relay Board.
6. Clean the Upper Head Cylinder with a deerskin swab saturated with Freon TF.

Note :

Upon completion of replacement, confirm performance. And if required, perform "TAPE INTERCHANGEABILITY ADJUSTMENT".

2. REPLACEMENT OF D.D. CYLINDER UNIT

Work with extreme care when removing or replacing the D.D. Cylinder Unit.
Do not touch video heads during servicing.

1. Remove the 2 screws and shield case on connectors.
2. Disconnect 2 connectors (P1501 and P1502) from the D.D. Cylinder Unit.
3. Remove screw (A) and discharge angle.
4. Remove the D.D. Cylinder Unit by removing 3 screws (B).

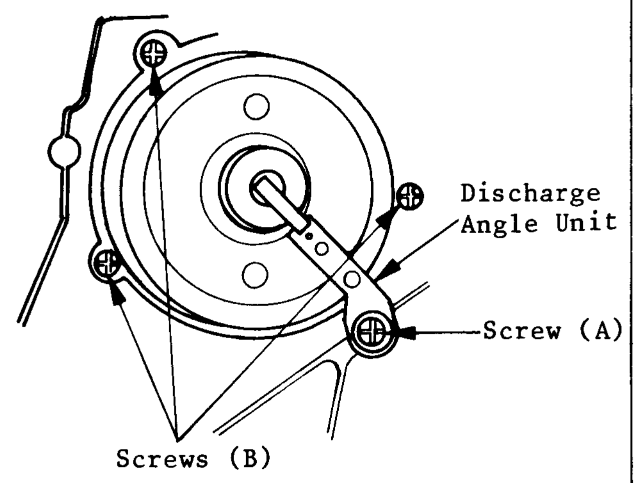

Discharge Angle Unit
Screw (A)
Screws (B)

Fig. M11-1 Replacement of D.D. Cylinder Unit

Note:

Since there is very little clearance between D.D. Cylinder Unit and chassis, remove the D.D. Cylinder Unit gently and carefully.

5. Remove the Upper Cylinder Unit from the D.D. Cylinder and reinstall it on new one. To perform this step, refer to "REPLACEMENT OF UPPER CYLINDER UNIT" section.
6. Reinstall the new D.D. Cylinder Unit and connect P1501 and P1502. Reinstall the shield case and Discharge Angle Unit.

Note:

1. When reinstalling the New D.D. Cylinder Unit, fit the New D.D. Cylinder Unit to the chassis by turning it counterclockwise.

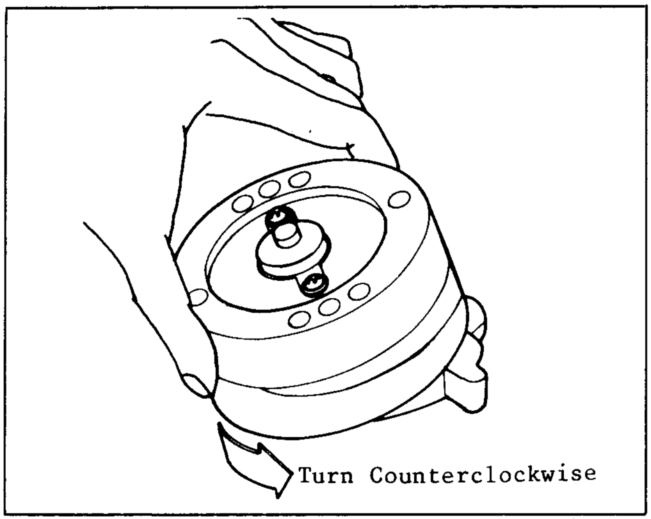


Fig. M11-2 Replacement of D.D. Cylinder Unit

2. Upon completion of replacement, confirm performance.
   If any further maintenance is required, perform "TAPE INTERCHANGEABILITY ADJUSTMENT".

3. CONFIRMATION OF DISCHARGE ANGLE UNIT INSTALLATION POSITION

Check to see if the Discharge Angle Unit is correctly set in a position as close to 1 mm as possible to the upper side from the center of the cylinder shaft as shown in Fig. M12.

Note:

Never install the Discharge Angle Unit to any position to the lower side from the center of the cylinder shaft, but always within a maximum of 1 mm to the upper side of the center of this shaft.

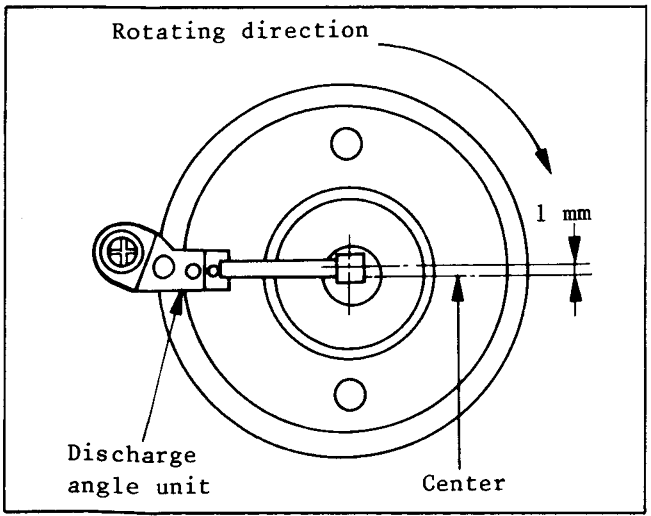


Fig. M12 Confirmation of Discharge Angle Unit Position

4. ADJUSTMENT OF V-STOPPERS

* Equipment Required:
V-Stopper Adjustment Fixture VFKS0029

1. Remove the D.D. Cylinder Unit from chassis. (Upper Cylinder Unit does not need removal from the D.D.Cylinder Unit.) Refer to "REPLACEMENT OF D.D. CYLINDER UNIT" section.
2. Loosen 4 screws (A) and install the fixture.
   Push the V-stoppers snugly against the pins and tighten the 4 screws(A).

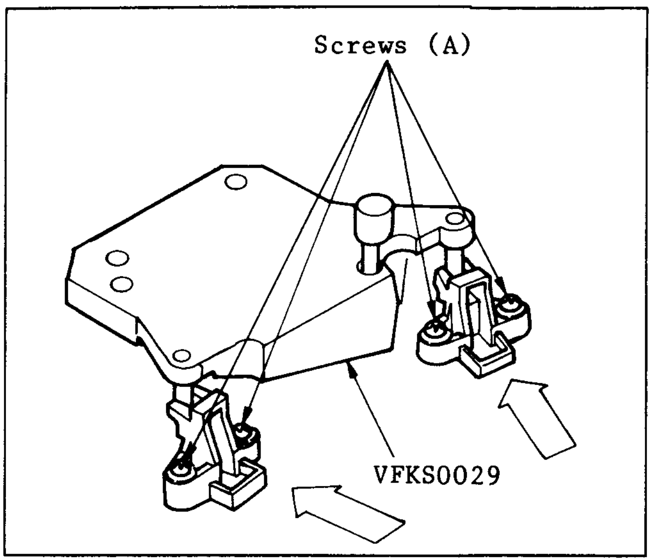


Fig. M13 Adjustment of V-Stoppers

3. Upon completion of the adjustment, simulate loading completion to ensure that posts smoothly fit the V-Stoppers. Then reinstall the D.D. Cylinder Unit.

5. POSITION ADJUSTMENT OF TENSION POST

* Equipment Required:
Tension Post Adjustment Plate
.................(VFKS0002)
Fine Adjustment Screwdriver
................(VFKS0136)

1. Remove the Top Case and Front Panel.
2. Put the Cassette Holder in down position without a cassette tape, referring to the procedures in 2-3-1 on page 2-3.
3. Push the play button for loading.

4. As soon as loading is completed, disconnect the AC plug and remove the Cassette Up Unit.
5. Loosen the screw slightly so that the tension band bracket can be moved in accordance with the procedure in item 7, but does not move when the screw driver is removed.
6. Place the adjustment plate.
7. Insert the fine adjustment screwdriver into the hole and move the tension band bracket right or left so that the tension post just touches the fixture.
8. Remove the adjustment plate and tighten the screw.
9. Replace the adjustment plate. Confirm that the tension post just touches the fixture.
10. Remove the jumper.

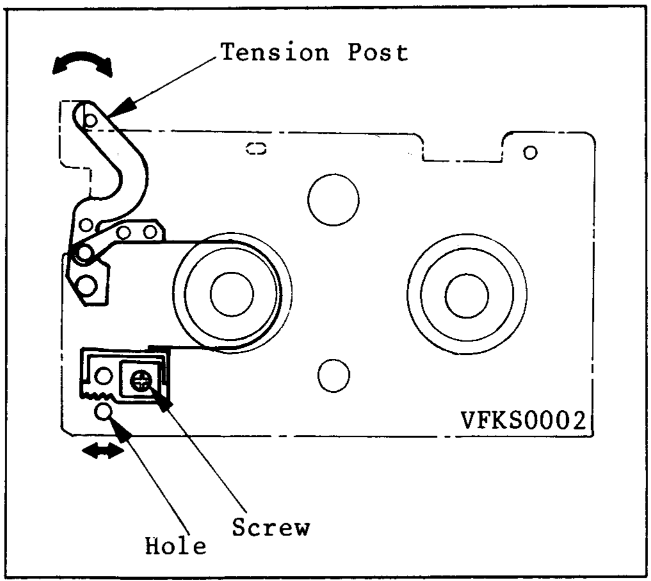


Fig. M14 Adj. of Tension Post

6. MEASUREMENT AND ADJUSTMENT OF BACK TENSION

A: Measurement Procedure

* Equipment Required:
Back Tension Meter (Tentelometer, Model T2-H7-UM, Purchase Locally)
VHS Cassette Tape (120 Minute Tape)

* Specification: 25 - 30g

1. Remove the Top Case.
2. Pull the erase head in the direction indicated by the arrow and hold it with adhesive tape.
3. Playback the cassette tape from its beginning and wait until tape running has stabilized. (for approx. 10 to 20 seconds)
4. Insert Tension Meter in tape path and confirm reading.
5. If the reading is out of specification, perform the adjustment procedure.

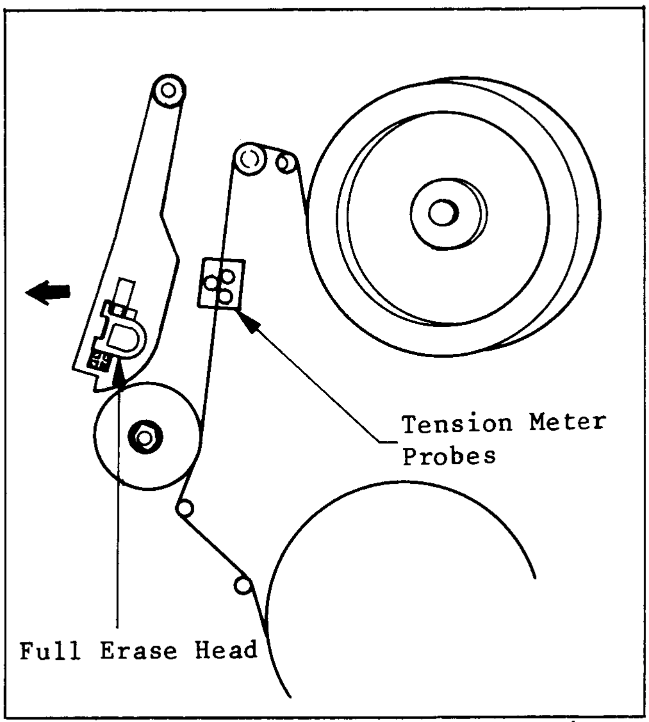


Fig. M15 Measurement of Back Tension

Note:
1. Make sure that the three probes of the meter are all in solid contact with tape, but out of contact with any other parts while measuring.
2. It is recommended that measurements be taken three times as tension meter is very sensitive.

B: Adjustment Procedure

* Equipment Required:
Fine Adjustment Screwdriver...(VFK0136)

1. Loosen screw (A) and insert the fine adjustment screwdriver into the hole (B).
2. Move the adjustment plate either direction as indicated by the arrow to obtain the specified tension.
Turn the driver clockwise to loosen tension, counterclockwise to tighten tension.

3. Tighten screw (A) and verify tension with the meter once again.
4. Reinstall the cabinet parts.

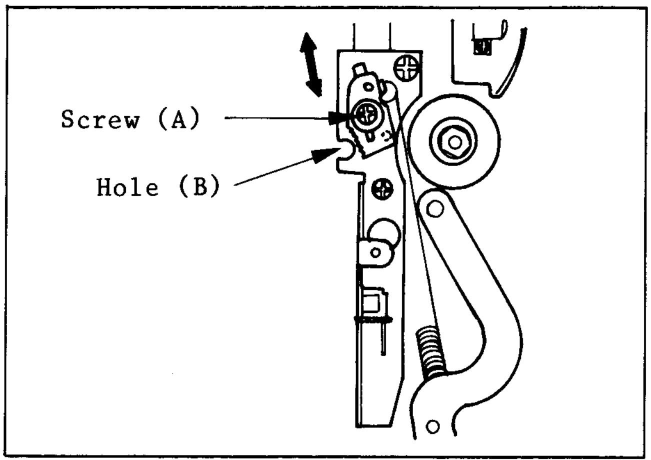


Fig. M16 Adj. of Back Tension

Note:
Upon completion of adjustment, remove the adhesive tape holding the erase head.

7. CONFIRMATION OF BRAKE TORQUE

A : Confirmation Procedure

* Equipment Required:
Dial Torque Gauge.........(VFK0133)
Adaptor for Gauge.........(VFK0134)

1. Remove the Top Case.
2. Put the Cassette Holder in Down position without a casette tape, referring to the procedures in 2-3-1 on page 2-3.
3. Attach the adaptor to the torque gauge and place the deck in STOP mode.
4. Place the torque gauge on the reel table. The weight of gauge should not rest on the reel table.

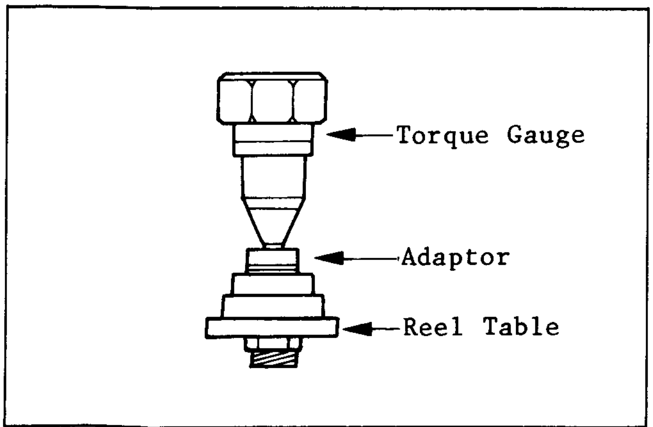
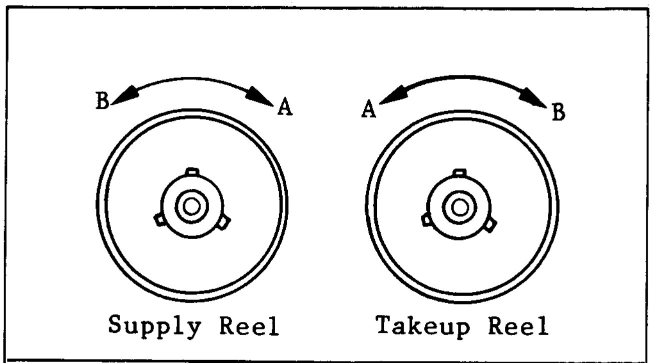


Fig. M17-1 Confirmation of Brake Torque

5. Turn torque gauge in either direction indicated in the Fig. M17-2 and read the gauge when the brake begins slipping.

Note:
If proper brake torque can not be obtained, clean the rotating surface of reel table with a soft cloth and recheck torque before replacing brakes.



	A	B
Takeup	more than 450g.cm	50 - 125 g.cm
Supply		

Fig. M17-2 Confirmation of Brake Torque

8. CONFIRMATION OF TAKEUP TORQUE

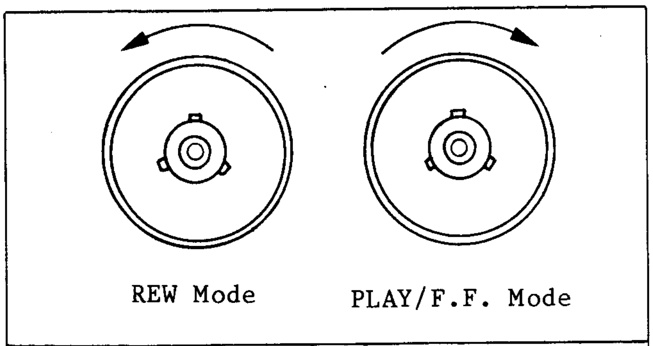
* Equipment Required:
Dial Torque Gauge .... (VFK0133)
Adaptor for Gauge .... (VFK0134)

* Specifications:
in PLAY mode .... 100 - 180g.cm
in F.F. mode .... more than 400g.cm
in REW mode .... more than 400g.cm

1. Attach the adaptor to the torque gauge.
2. Remove the Top Case and Bottom plate.
3. Put the Cassette Holder in Down position without a casette tape, referring to the procedures in 2-3-1 on page 2-3.
4. Place the torque gauge on the takeup reel table, push the Play button and read torque on the gauge.
   Repeat above procedures in F.F. mode after pushing the F.F. button.

Note:
While measuring, the weight of the gauge should not rest on the reel table.

5. Set the torque gauge on the supply reel table, press the rewind button to check REW mode torque.
6. Remove the jumper



PLAY Mode	100 - 180g.cm
F.F. Mode	more than 400g.cm
REW Mode	more than 400g.cm

Fig. M18 Confirmation of Takeup Torque

9. POSITION ADJUSTMENT OF SAFETY TAB SWITCH

* Equipment Required:
Cassette Holder Fixture VFKS0004

1. Remove the Top Case,Front Panel, and Cassette Up Unit.
2. Slightly loosen the screws (A) and (B).
3. Place the fixture in place over the reel tables.
4. Adjust the Safety Switch Angle either forward or backward until the Safety Tab Switch closes and Safety Tab Switch just turns ON. Tighten Screws (A) and (B).

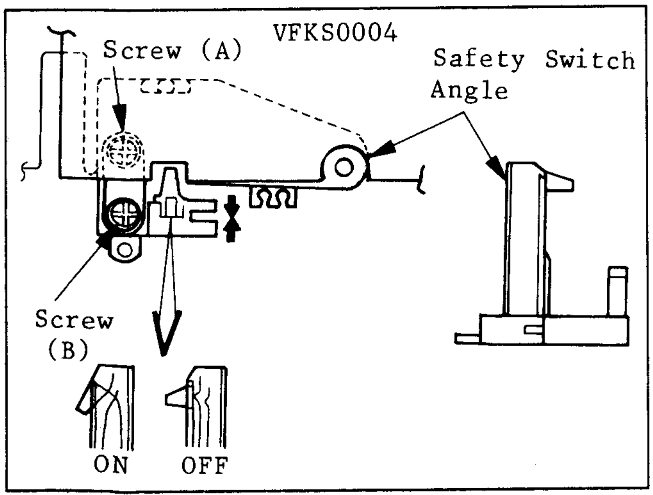


Fig. M19-1 Position Adjustment of Safety Tab Switch-(1)

Note:
1. Don't adjust with upward switch lever.
2. Confirm that the Safety Switch correctly turns ON and OFF using video cassette tapes with and without the Safety Tab.

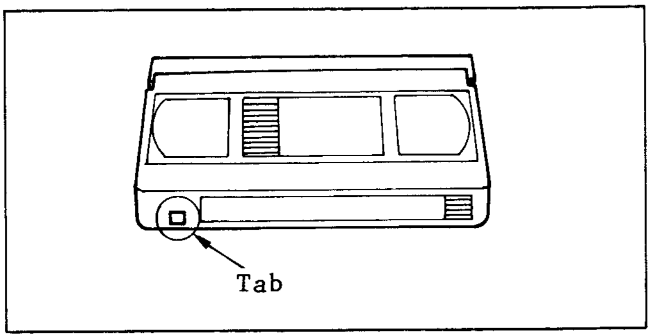


Fig. M19-2 Position Adjustment of Safety Tab Switch-(2)

10. HEIGHT ADJUSTMENT OF REEL TABLES

* Equipment Required:
Post Adjustment Plate ...... (VFKS0010)
Reel Table Height Fixture .. (VFKS0009)

* Specification .... 0 (+- 0.1)mm

1. Remove the Top Case, Front Panel, and Cassette Up Unit.
2. Place the post adjustment plate over the reels, and put the fixture on it. Set the fixture to zero "0" making sure that the scraper of fixture touches the cut-out portion of the plate.

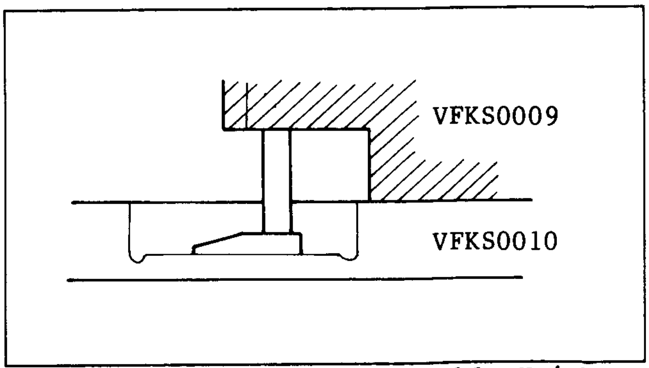


Fig. M20-1 Adj. of Reel Table Height

3. Then measure the top portion of reel table and confirm the difference against the result of the measurement taken in the above step. Do same for the other reel table.

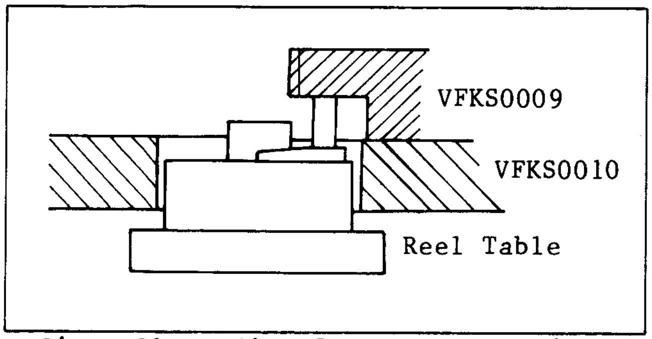


Fig. M20-2 Adj. of Reel Table Height

4. If the difference is more than 0.1mm (higher or lower), adjust the height of reel table to obtain the specified height.

5. For adjustment, change the poly slider washer located under the reel table. (The washer is available in sizes of varying thickness, t=0.13mm, 0.25mm and 0.5mm.)

11. HEIGHT ADJUSTMENT OF TAPE GUIDE POSTS

* Equipment Required:
Lock Screw Wrench ....(VFKS0032)
Post Adjustment Plate .....(VFKS0010)
Reel Table Height Fixture ....(VFKS0009)
Nut Driver ....(Purchase Locally)
Post Adjustment Screwdriver ....(VFK0137)

1. Remove the Top Case, Front Panel and Cassette Up Unit. Place the Adjustment Plate.

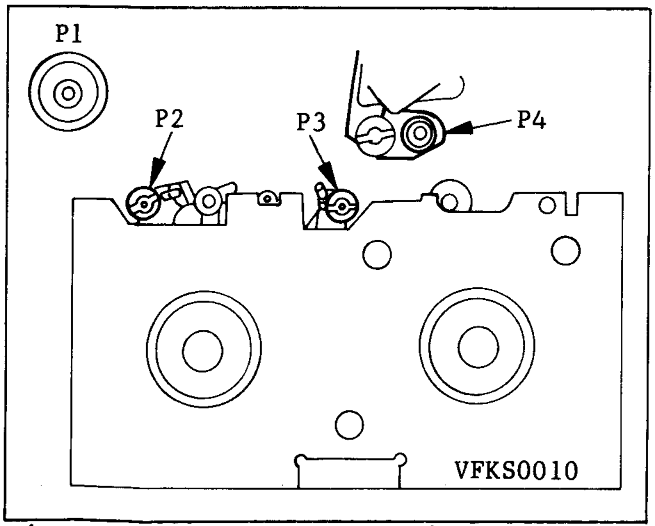


Fig. M21-1 Adj. of Tape Guide Post Height

2. First lower all posts so that the condition of height becomes as shown below.
(Lower end of post and tape guide should be lower than scraper. Loosen lock screw located at lower portion of posts (P2 & P3) by Lock Screw Wrench, then turn the posts with post adjustment screwdriver.)

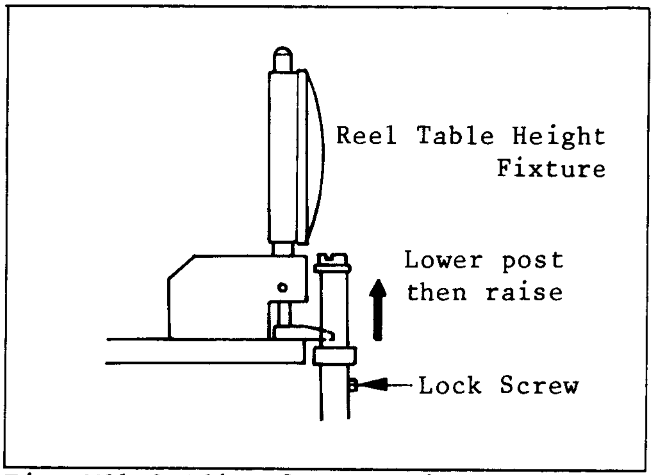


Fig. M21-2 Adj. of Tape Guide Post Height

3. Place the fixture on the Adjustment Plate and fit the scraper to the Adjustment Plate as shown in Fig. M21-2.
(The scraper of the fixture should be fully lowered till it touches plate.)
4. Set the fixture to zero "0" and slowly raise the post until it just touches the scraper. When the scraper touches the post,it should fit as shown below in Fig. M21-3 (b). For adjustment of P1 and P4, use the nut driver.
(The Post cap on P4 can be removed by turning counterclockwise.)
For adjustment of P2 and P3, use the post adjustment screwdriver.

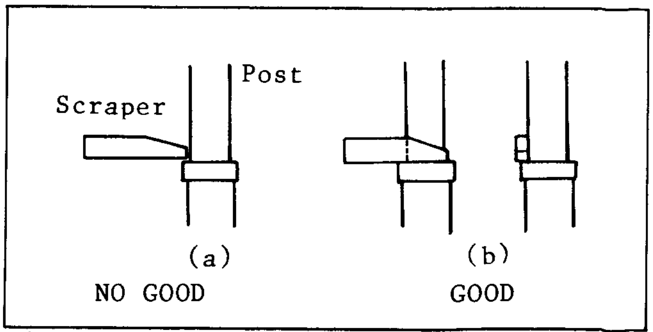


Fig. M21-3 Adj. of Tape Guide Post Height

Note:

Upon Completion of adjustment, tighten lock screws on the P2 and P3 by Lock Screw Wrench and also install the post cap on post 4. When the post cap on P4 is reinstalled, the position of it should be as shown below when viewed from the direction indicated by the arrow.

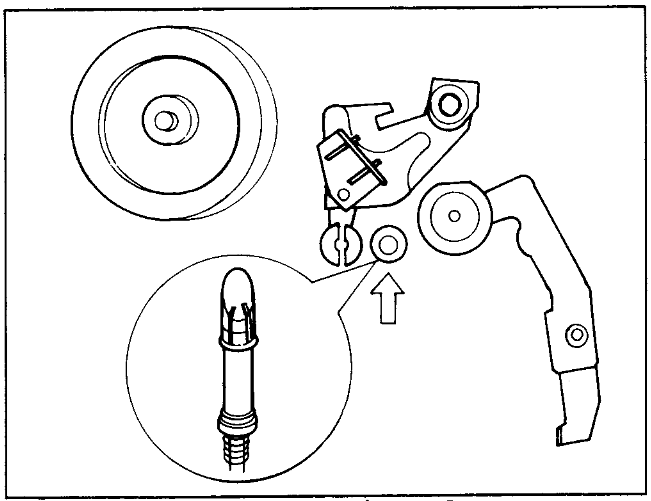


Fig. M21-4 Installation of Post Cap

12. HEIGHT ADJUSTMENT OF P5 ARM UNIT

Note :

1. The adjustment should be performed after the adjustment of P4 as the spec. is based on height of P4.
2. The adjustment should be performed in the loading completion mode.

Equipment Required :

Post Adjustment Plate	VFKS0010
Reel Table Height Fixture	VFKS0009
Nut Driver (5.5mm) ..	Purchase Locally

Specification : 0 (+- 0.05) mm

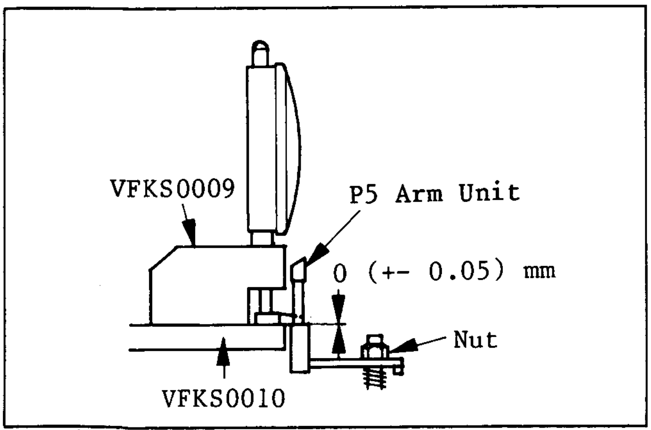


Fig. M22 Height Adjustment of Pull Out Post

1. Put the Cassette Holder in down position without a cassette tape, referring to the procedures in 2-3-1 on page 2-3.
2. Turn power switch ON, push the play button for loading.
   Then disconnect the AC plug.
3. First raise the P5 Arm Unit a little higher than the Post Adjustment Plate by tuning the nut counterclockwise
4. Place the post adjustment plate, put the reel table height fixture on the plate and set height fixture to zero "0" with condition the foot touches on the height adjustment plate.
5. Slightly lower the post by turning the nut clockwise. Place the foot to the post as shown in Fig. M22.
6. Then slowly turn the nut till the fixture reads the specified height.
7. Reinstall the Cassette Up Unit and remove the jumper and plug in for unloading.

13. TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)

Note:

To perform these adjustment/confirmation procedures, make sure that the tracking control is set in the detent (fixed) position.

* Equipment Required:

Alignment Tape	VFMS0001H6
Post Adjustment Screwdriver	VFK0137
H-Position Adjustment Screwdriver	VFKS0003
Lock. Screw Wrench	VFKS0032
Nut Driver (5.5mm) ...	Purchase Locally
Oscilloscope	

13-A. CONFIRMATION OF TAPE TRAVEL

1. Playback a cassette tape and confirm that the tape travels without curling at the edges of the tape.

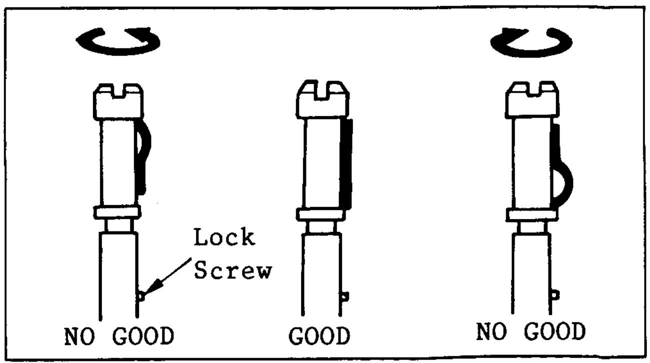


Fig. M23. Confirmation of Tape Travel

2. If curling is apparent, adjust the height of posts by turning the top of post with the post adjustment screwdriver. (for P2 & P3)

Note:
Before turning P2 and P3, slightly loosen a lock screw by the Lock Screw Wrench.

13-B. CONFIRMATION OF A/C HEAD HEIGHT

This confirmation is required when the A/C Head was replaced and for preliminary height adjustment. For final adjustments, perform item 13-C,13-D.

1. Looking at the lower edge of the control head with the tape running, ensure that the lower edge of the tape runs along the lower edge of the control head. If it doesn't, slightly turn the nut (A) in either direction to correct. Clockwise to lower the head and counterclockwise to raise it.

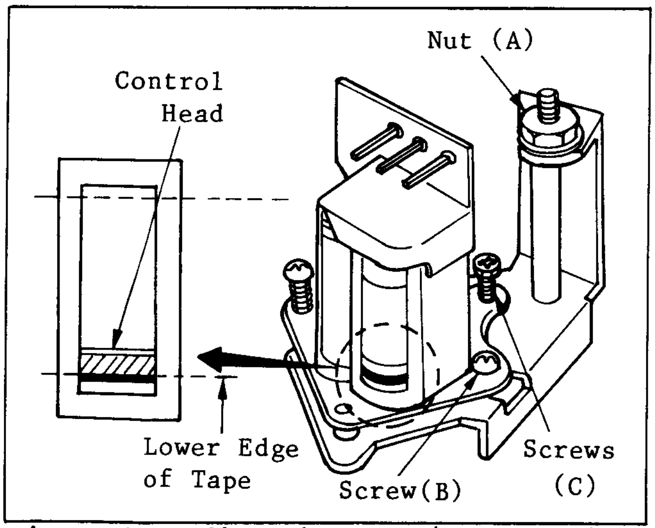


Fig. M24 Confirmation of A/C Head Height

13-C. CONFIRMATION OF TILT OF A/C HEAD

This procedure should be performed after the height adjustment of P4.

1. Playback the tape and confirm that the tape runs between lower and top limits of P4 post. Also confirm that the tape is running smoothly.

2. If adjustment is required, turn Screw (C) clockwise until curling is apparent at lower edge of P4. Then turn screw (C) counterclockwise until the curling is smoothed out.

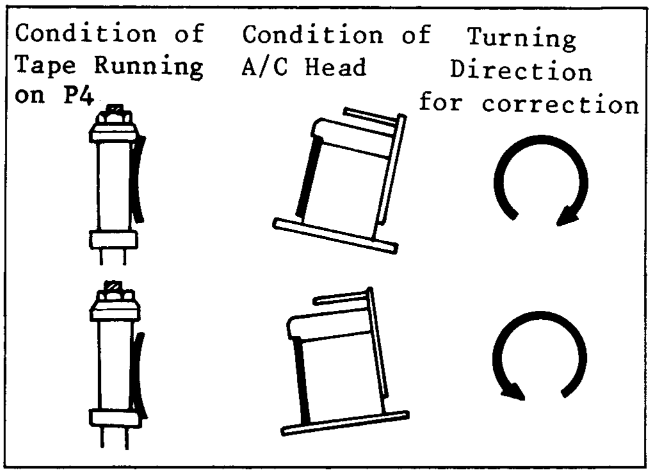

Condition of Tape Running on P4
Condition of A/C Head
Turning Direction for correction

Fig. M25 Confirmation of A/C Head Tilt

13-D. HEIGHT AND AZIMUTH ADJUSTMENT OF A/C HEAD

A. Adjustment for PV-1525

1. Connect the oscilloscope to the audio output jack on the rear of the deck.
2. Playback the monoscope portion (6kHz, Mono) of the alignment tape, VFMS0001H6.
3. Adjust the screw (B) on the head base so that the output level becomes maximum.

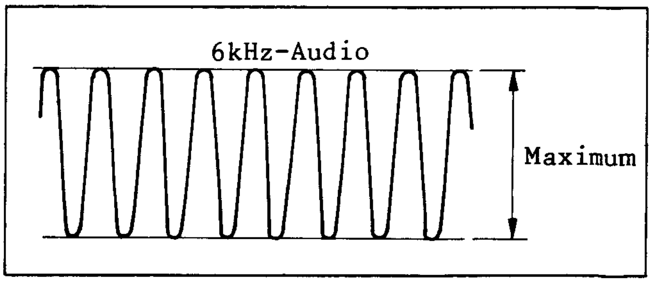


Fig. M26-1 Adj. of A/C Head Height

4. Readjust nut (A) for maximum output.

B. Adjustment for PV-1530

1. Connect the oscilloscope CH1 to the the Audio Output (Left) and CH2 to the Audio Output (Right) on the rear panel.
2. Playback the color bar portion (3kHz, Stereo) of the alignment tape (VFMS0001H6).
3. Adjust the screw (B) so that the CH2 Audio Output (Right) is maximized.

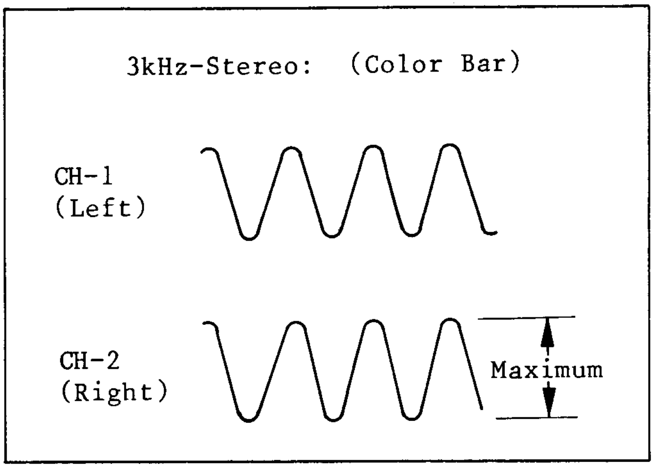

3kHz-Stereo: (Color Bar)
CH-1
(Left)
CH-2
(Right)
Maximum

Fig. M26-2 Height and Azimuth Adjustment of A/C Head

4. Then, adjust the nut (A) so that the CH2 Audio Output (Right) is Maximized

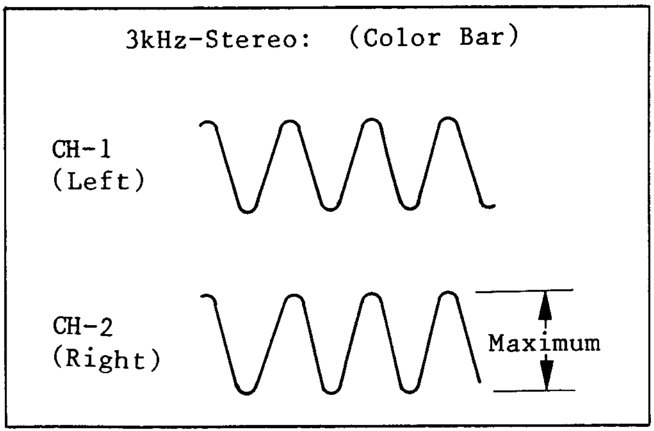

3kHz-Stereo: (Color Bar)
CH-1
(Left)
CH-2
(Right)
Maximum

Fig. M26-3 Height and Azimuth Adjustment of A/C Head

5. Playback the monoscope portion (6kHz, Monaural) of the alignment tape (VFMS0001H6).
6. Then, adjust screw (B) so that the phases of both channels match as shown in Fig. M26-4.

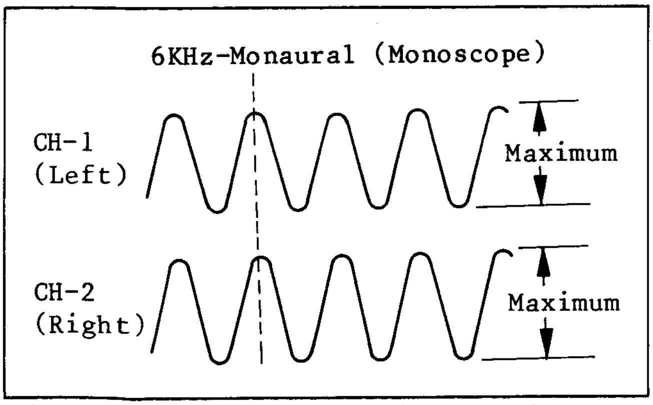

6KHz-Monaural (Monoscope)
CH-1
(Left)
Maximum
CH-2
(Right)
Maximum

Fig. M26-4 Height and Azimuth Adjustment of A/C Head

Note :

During this adjustment, the audio output level should be maximum.

13-E. HORIZONTAL POSITION ADJUSTMENT OF A/C HEAD

1. Set the tracking control to the detent (fixed) point. Connect the oscilloscope CH1 to TP3005 on the Signal Process Section and CH2 to TP2003 on the Servo Section.

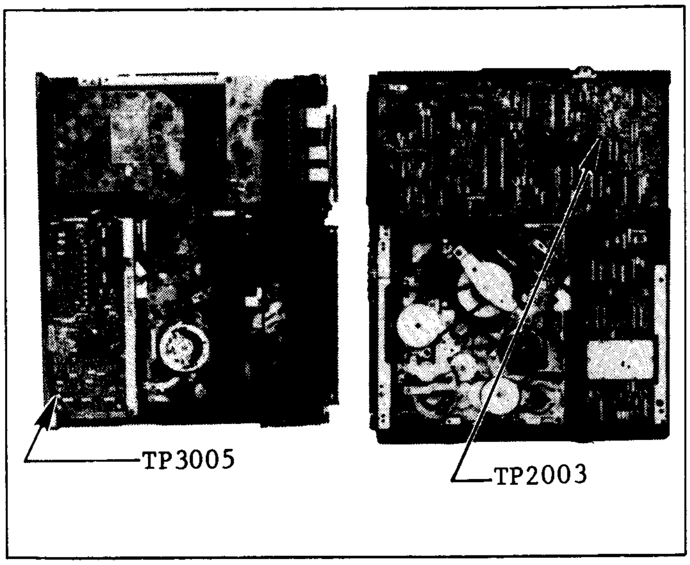

TP3005
TP2003

Fig. M27 Horizontal Position Adjustment of A/C Head-(1)

2. Playback the monoscope portion of the alignment tape VFMS0001H6 and note the envelope which corresponds to the high period of the Head Switching Signal at TP2003 as shown in Fig. M28

   Once note, use only this envelope for the subsequent adjustments.
3. Slowly turn the Adjustment Nut so that the envelope is at maximum. Before finding the center of the maximum period of envelope, rotate the adjustment nut back and forth slightly to confirm the limits on either side of the maximum period. Next determine the center point.
4. Confirmation of the correct adjustment can be made by turning the tracking control to the right and the left to check the symmetry of the envelope.

   If the envelope changes symmetrically, the adjustment has been done correctly.

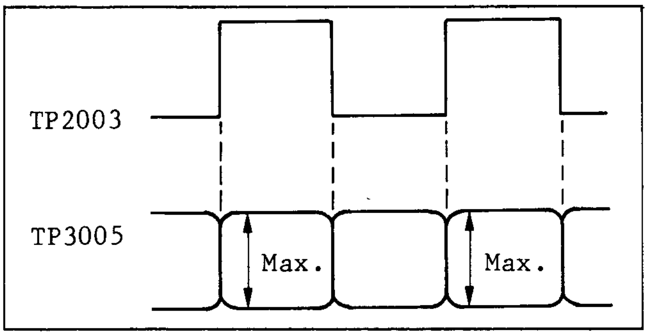

TP2003
TP3005
Max.
Max.

Fig. M28 Horizontal Position Adjustment of A/C Head-(2)

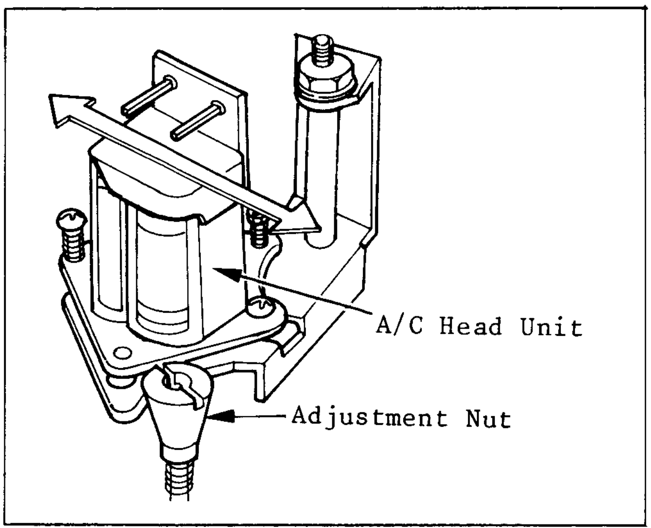

A/C Head Unit
Adjustment Nut

Fig. M29 Horizontal Position Adjustment of A/C Head-(3)

13-F. CONFIRMATION/ADJUSTMENT OF ENVELOPE OUTPUT

1. Set the tracking control in the detent (fixed) position. Connect the oscilloscope to the TP3005 on Signal Process Section. Use TP3006 as a trigger.
2. Playback the monoscope portion of the alignment tape VFMS0001H6 and adjust the height of posts P2 and P3 watching the scope display so that the envelope becomes as flat as possible. ($V1/V\text{-max} \geqq 0.7$, $V2/V\text{-max} \geqq 0.8$) If adjustment is required, turn top of post with post adjustment screwdriver. For adjustment of P2 & P3, refer to step 2 of item 13-A.

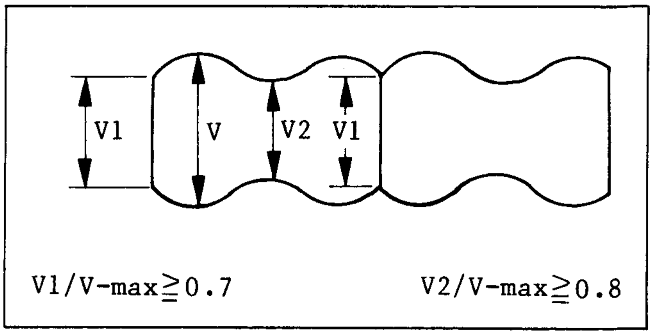

V1
V
V2
V1
V1/V-max≧0.7
V2/V-max≧0.8

Fig. M30-1 Spec. of Envelope Figure

3. When the scope display is as follows, adjust the height of P2 so that the waveform looks like Fig. M30-4.

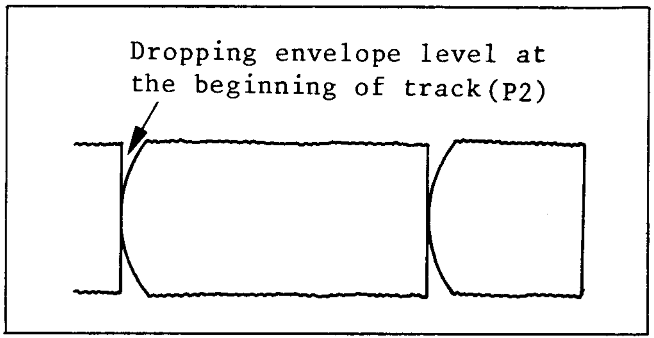

Dropping envelope level at the beginning of track(P2)

Fig. M30-2 Envelope Figure

4. When the scope display is as follows, adjust the height of P3 so that the waveform looks like Fig. M30-4.

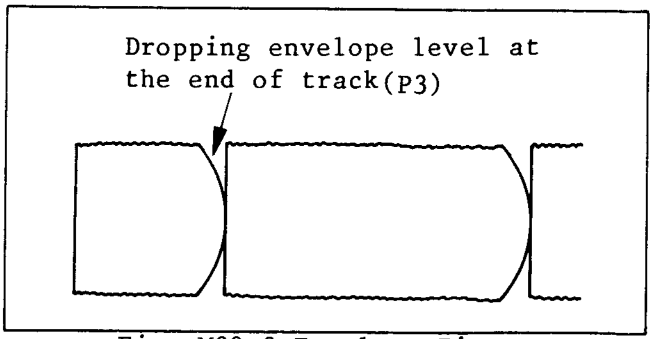

Dropping envelope level at the end of track(P3)

Fig. M30-3 Envelope Figure

5. The scope display should appear as shown below when P2 and P3 are adjusted correctly.

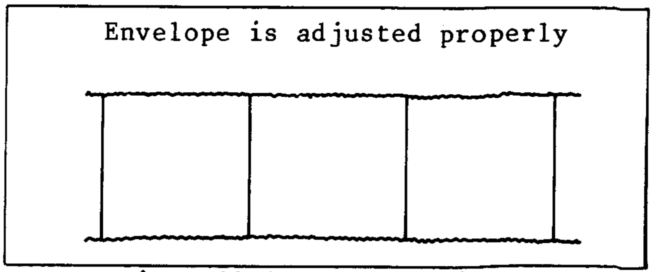

Envelope is adjusted properly

Fig. M30-4 Envelope Figure

Note :

Upon Completion of adjustment of P2 and P3, confirm the Horizontal Position by turning the tracking control clockwise or counterclockwise.
And if required, perform "Horizontal Position Adjustment of A/C Head".

14. ADJUSTMENT OF FG HEAD GAP

* Equipment Required:
Fine Adjustment Screwdriver ... VFK0136

* Specification: 0.16 (+- 0.02) mm

1. Remove 2 screws (A) on the thrust Holder, then remove the Capstan Pulley Unit, 5 screws (B) and Capstan Stator Unit.

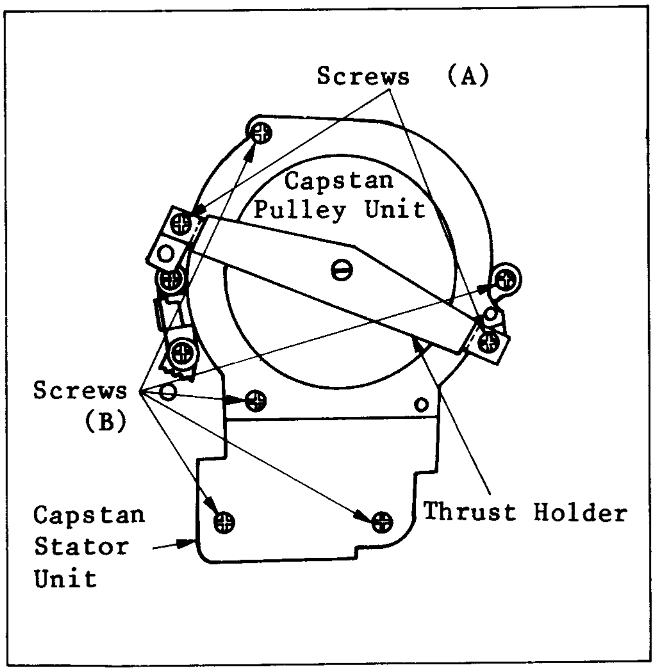

Screws (A)
Capstan Pulley Unit
Screws (B)
Capstan Stator Unit
Thrust Holder

Fig. M31-1 Adjustment of F.G. Head Gap

2. Slightly loosen the 2 screws (C) and set the fine adjustment screwdriver into the hole (D).
Turn screwdriver clockwise until the FG head touches the rotor and just slightly turn it counterclockwise so the gap becomes as specified.

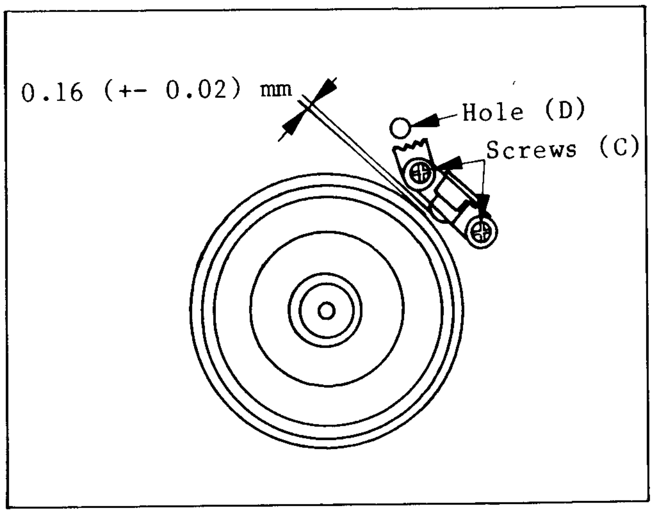

0.16 (+- 0.02) mm
Hole (D)
Screws (C)

Fig. M31-2 Adjustment of F.G. Head Gap

Note:
1. Do not touch the outside circumference surface of the rotor with any tool, and keep any magnetizable material away from the rotor magnet.
2. When reinstalling the Capstan Stator Unit, the circumference of the hole in the Capstan Stator Unit must be Centered with the circumference of the Rotor Boss.

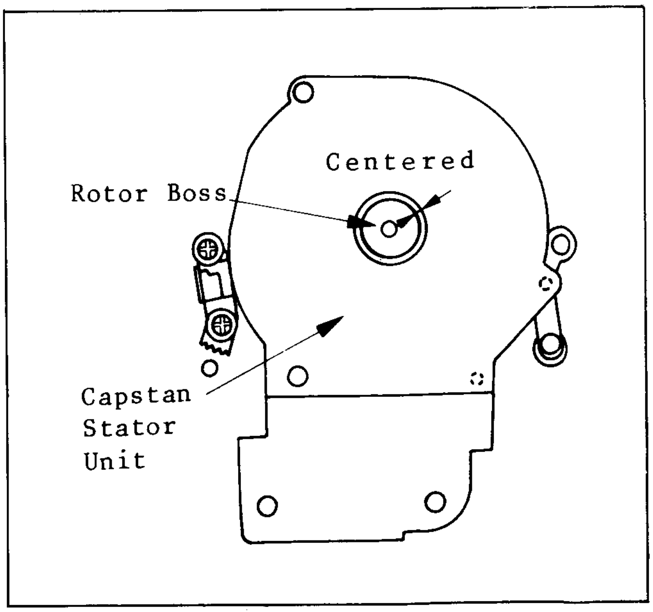

Centered
Rotor Boss
Capstan Stator Unit

Fig. M31-3 Adjustment of F.G. Head Gap

15. CONFIRMATION/ADJUSTMENT OF THRUST GAP

* Equipment Required:
Reel Table Height Fixture VFKS0009

* Specification: 0.05 - 0.09mm

1. Place the Unit upside down and place the height fixture on the thrust Holder. Set the fixture to zero "0".
2. Next, push the capstan shaft by your finger, and confirm the thrust gap.
3. If the gap is out of specification, then adjust the thrust screw by turning it clockwise or counterclockwise.

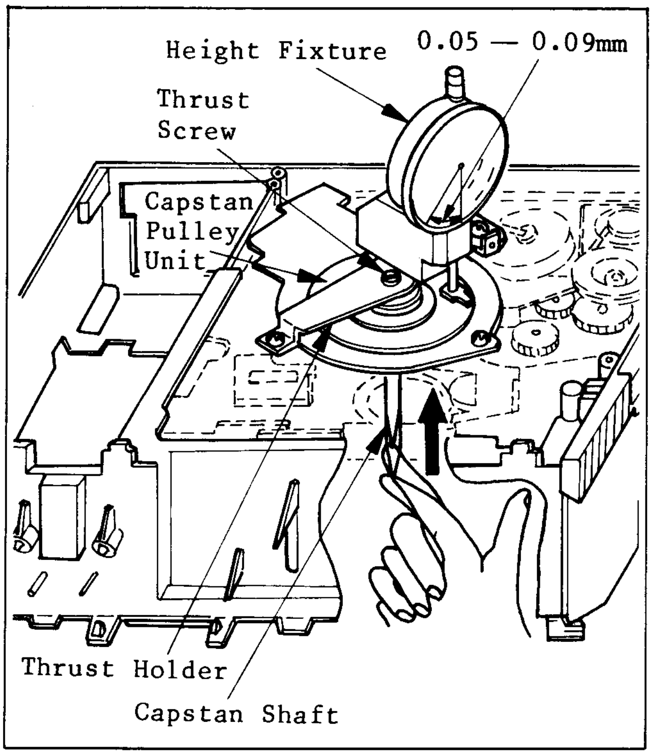


Fig. M32-1 Confirmation/Adjustment of Thrust Gap

Note:

Upon completion of above procedure, adjust the capstan seal so that this seal is out of contact with the pressure roller and capstan holder. The specification of clearance is approx. 0.5 (+- 0.2)mm.

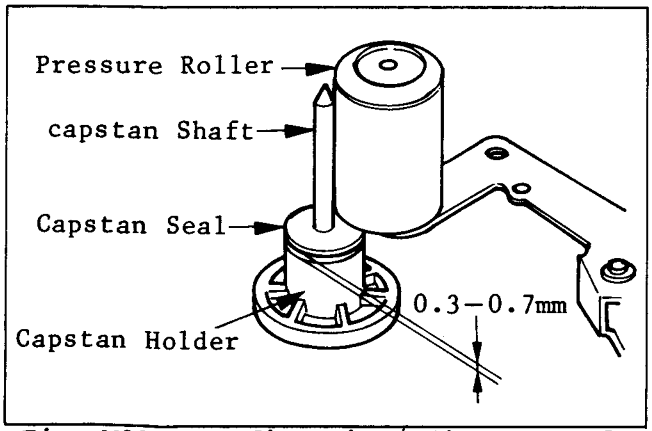


Fig. M32-2 Confirmation/Adjustment of Thrust Gap

16. ADJUSTMENT OF CAM GEAR AND MODE SELECT SWITCH

General Condition:

The mechanism of this model is mostly engaged to the electrical circuit, System Control Circuit, through the mode select switch. Therefore the relation between the mode switch and the cam gear determines all further mechanical movement of the mechanical parts such as levers, gears, rollers and so on. If the adjustment of this item is performed improperly, the deck will be unloaded or automatically stopped. It will also result in damage to mechanical and electrical parts.

Note:

Step 7 of this procedure describes the necessary adjustment if the mode select switch is replaced.

Adjustment Procedures:

This procedure **starts** with the condition that the Cassette Lock Unit, Kick Base Unit, Sector Gear, Cam Gear and Driving Gear have been removed.

1. Turn loading gear clockwise until post 2 and 3 are fully unloaded. The small projection on the loading gear will be pointing up in the unloaded condition.

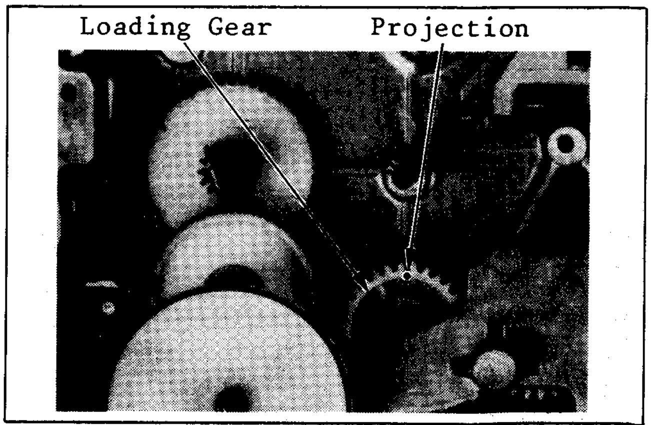


Fig. M33-1 Adj. Procedure

2. Install the driving gear so that the hole on the driving gear aligns with the projection on the loading gear. Ensure that the loading gear is still in the fully unloaded condition. Install the C-Ring to mount driving gear.

3. Slowly slide the main rod so that the hole (B) of the main rod meets the hole (C) of chassis.
   This will simulate stop mode (unloading completion) of main rod and mode select switch.

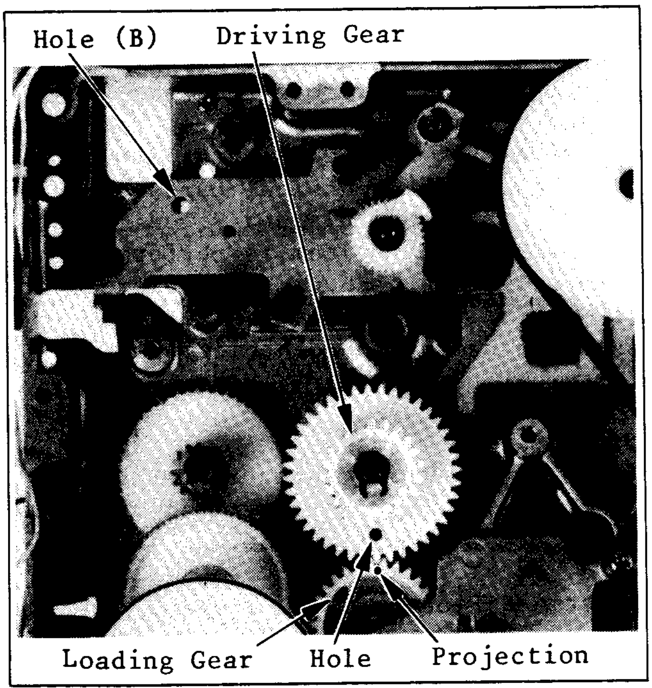

Hole (B)
Driving Gear
Loading Gear
Hole
Projection

Fig. M33-2 Adj. Procedure

4. Insert the cam gear with the simple slot side showing so that the hole (A) on the gear meets the hole (B) on the main rod and hole (C) on the chasis.
   To facilitate matching the three holes, use the small hex, wrench or a metal pin. Then install the C-Ring to mount cam gear.

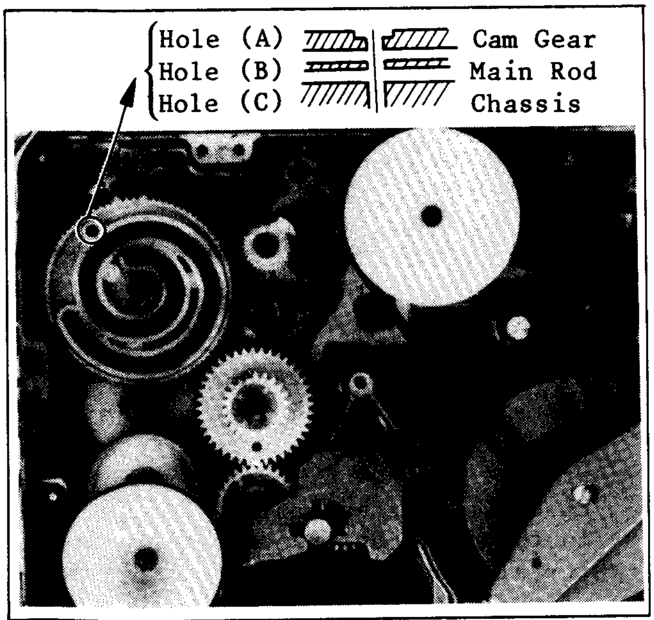

Hole (A)
Hole (B)
Hole (C)
Cam Gear
Main Rod
Chassis

Fig. M33-3 Adj. Procedure

5. Install the sector gear so that the pin on the sector gear meets the inner slot of the cam gear as shown in Fig. M33-4. Also install C-Ring in order to mount sector gear.

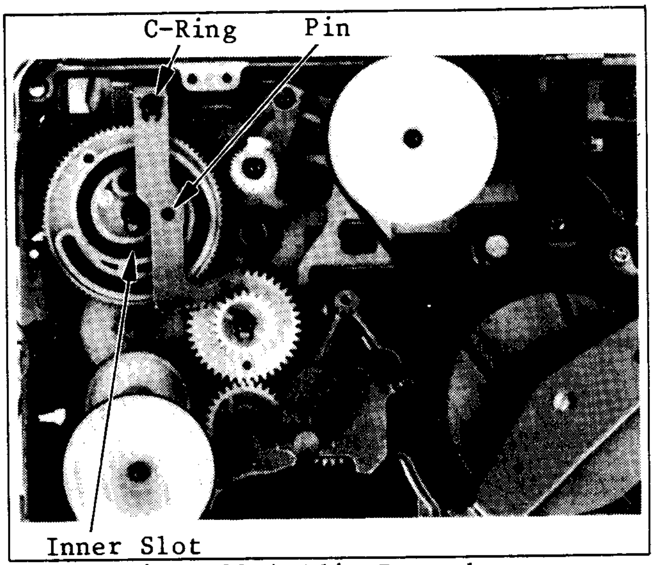

C-Ring
Pin
Inner Slot

Fig. M33-4 Adj. Procedure

6. Completed adjustments should appear as illustrated below.

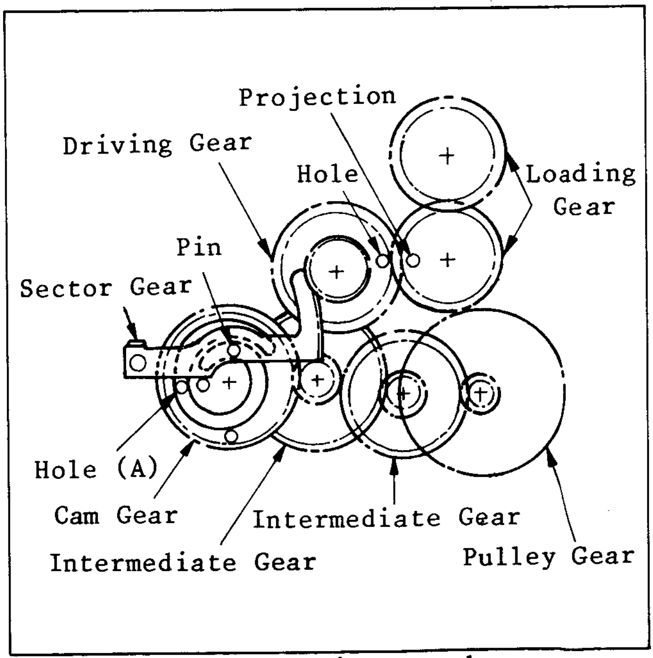

Projection
Driving Gear
Hole
Loading Gear
Pin
Sector Gear
Hole (A)
Cam Gear
Intermediate Gear
Intermediate Gear
Pulley Gear

Fig. M33-5 Adj. Procedure

7. (Adjustment of Mode Select Switch)
   Keep the main rod in the unloading completion condition so that the hole (A) cam gear, hole (B) of main rod and the hole of chassis are aligned.
   Upon completion, ensure that the movement of the deck is normal.

Place the Mode Select Switch so that the movable projection (A) on Mode Select Switch fits around the tab on the main rod, enclosing it. Slowly slide the Mode Select Switch sideways until the V-notches in movable Projection and the V-notch on the Mode Select Switch are aligned. Tighten two screws (C) to secure alignment.

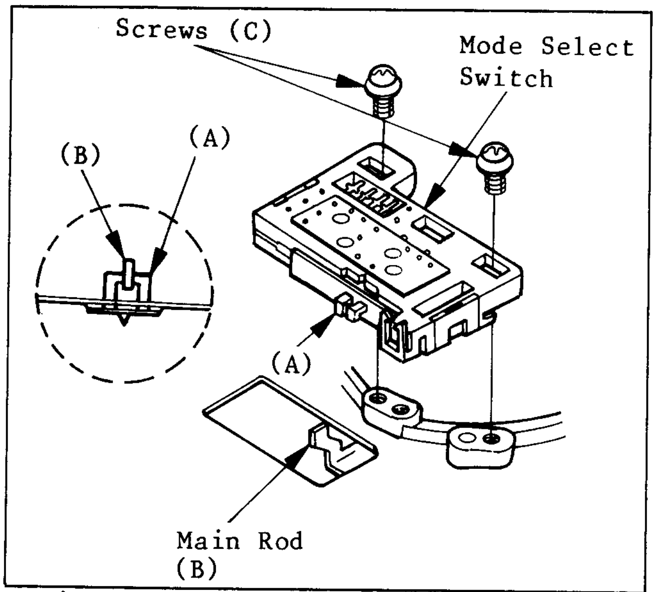


Fig. M33-6 Adj. of Mode Select Switch

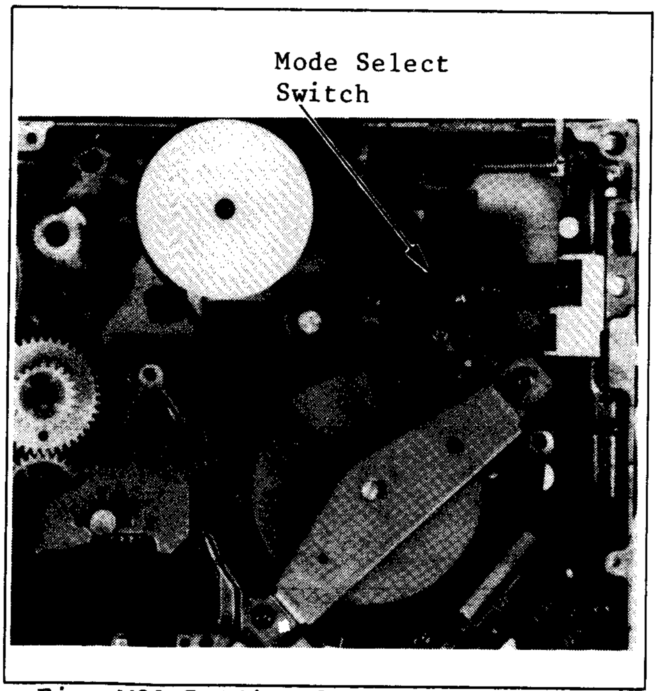


Fig. M33-7 Adj. of Mode Select Switch

8. Turn the Pulley gear in both directions to confirm smooth movement of this mechanism.
9. Install the Cassette Lock Unit and Kick Base Unit.

17. ADJUSTMENT OF CASSETTE UP GEARS.

1. Remove the Cassette Up Unit according to removal procedure of Cassette Up Unit.
2. Set Cassette Up Unit in full cassette Up condition.

Full Cassette Up Condition :

(a). Turn the Cassette Loading Motor by hand to the Cassette Up Condition.

(b). Then remove the worm wheel stopper. Confirm that the wiper gear arm Unit (R) is on the full left side of its arc and cassette holder is in full up condition as shown in Fig. M34.

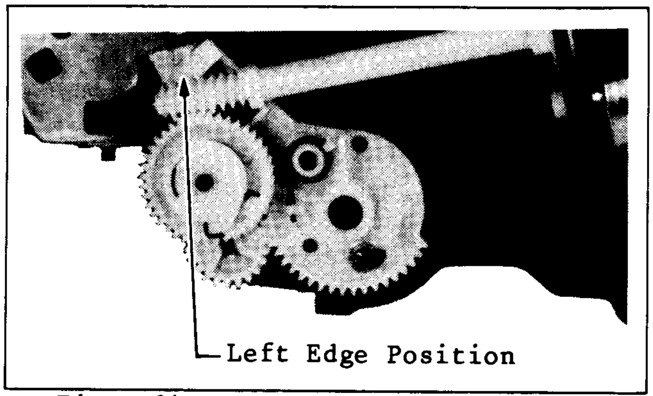


Fig. M34 Cassette Up Condition

Note :

All the following procedures for adjustment and part replacement should be performed with Cassette UP Unit in full Cassette Up Condition.

17-A RIGHT SIDE GEARS

This procedure starts with the condition that the switch Angle Unit, worm wheel unit, wiper Gear arm Unit (R) and Main Shaft Gear(R) have been removed.

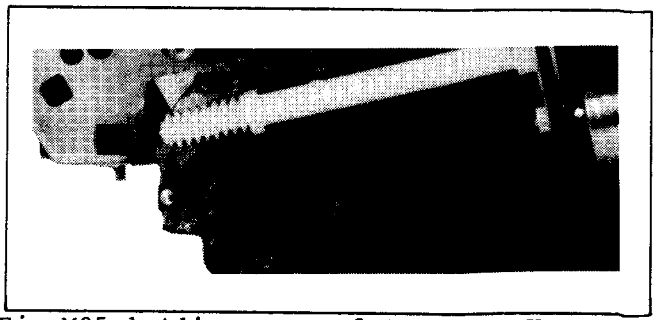


Fig.M35-1 Adjustment of Cassette Up Gears-(1)

1. Install the Main shaft Gear (R).

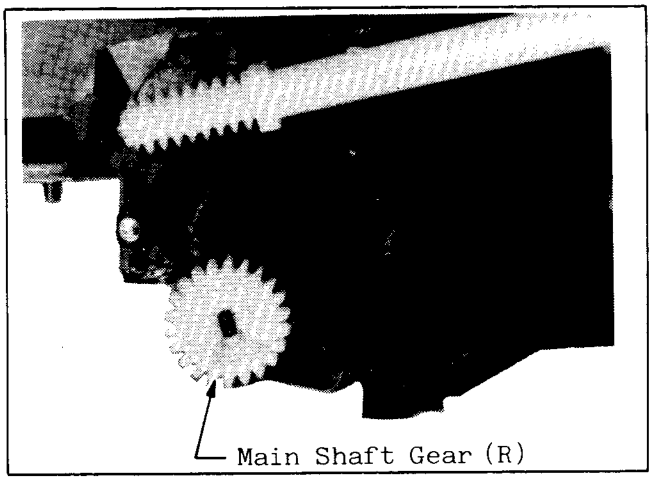

Main Shaft Gear (R)

Fig. M35-2 Adjustment of Cassette Up Gears-(2)

2. Install the wiper gear arm (R) unit so that the projection (A) on the wiper gear arm (R) unit and the Projection (B) on the Main shaft Gear (R) are aligned. Pin of Cassette Holder-R should fit into the slot of wiper gear arm (R).

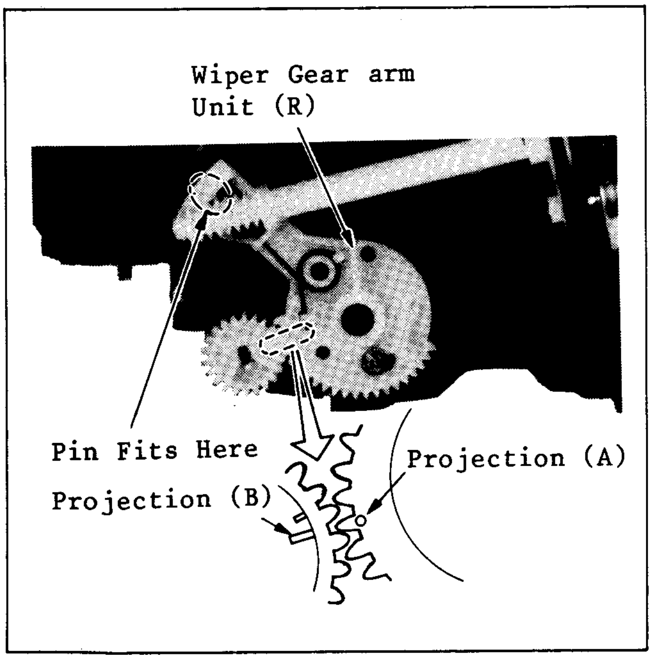

Wiper Gear arm Unit (R)
Pin Fits Here
Projection (A)
Projection (B)

Fig. M35-3 Adjustment of Cassette Up Gears-(3)

3. Install the worm wheel unit so that the tooth (E) beside the projection (C) on the worm wheel unit and the valley (F) on the Main Shaft Gear opposite the shorter projection (D) on the Main shaft Gear should be aligned as shown in Fig.35-4.

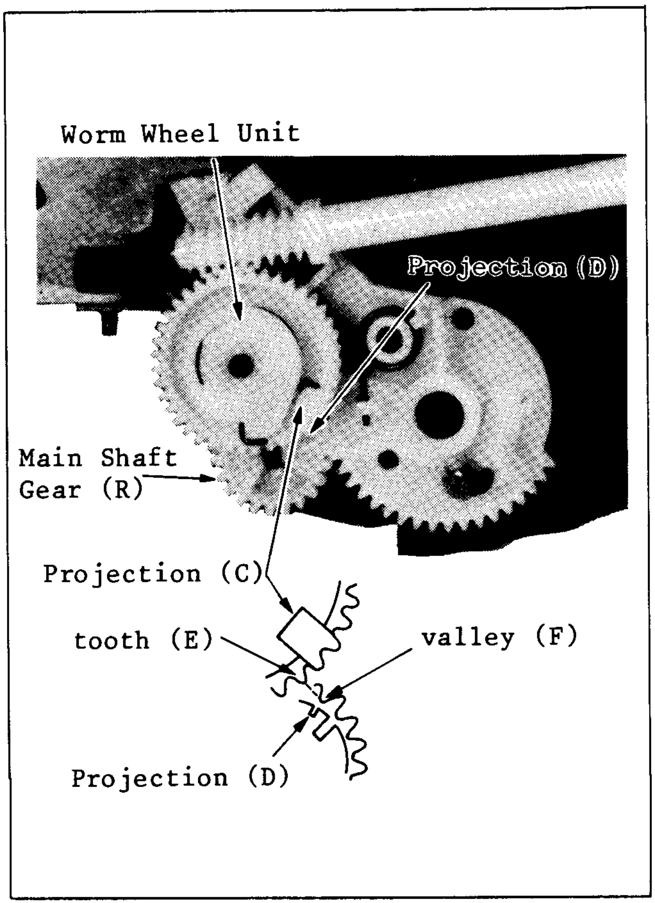

Worm Wheel Unit
Projection (D)
Main Shaft Gear (R)
Projection (C)
tooth (E)
valley (F)
Projection (D)

Fig. M35-4 Adjustment of Cassette Up Gears-(4)

4. Install worm wheel stopper unit and support angle with 3 screws (A) as shown in Fig. M33-5.

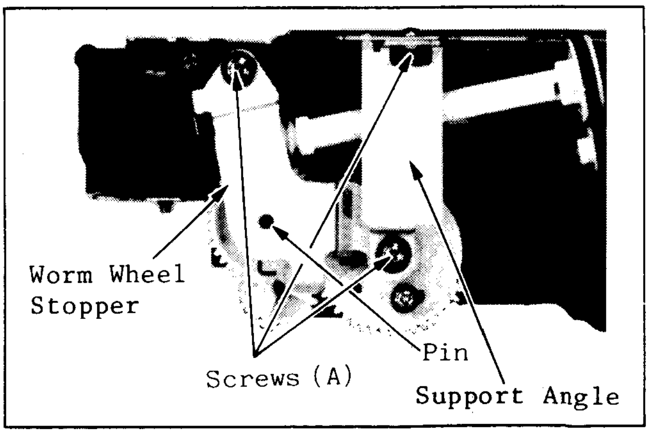

Worm Wheel Stopper
Screws (A)
Pin
Support Angle

Fig. M35-5 Adjustment of Cassette Up Gears-(5)

5. Install the Switch Angle Unit with screw and 3 Locking tabs as shown below.

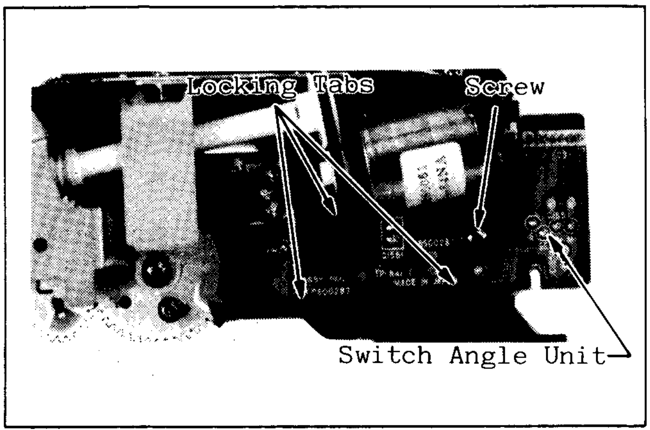

Locking Tabs
Screw
Switch Angle Unit

Fig. M35-6 Adjustment of Cassette Up Gears-(6)

17-B. LEFT SIDE GEARS

This procedure starts with the condition that the Cassette Compartment Opener Lever, wiper Gear (L) and Main Shaft (L) Unit have been removed.

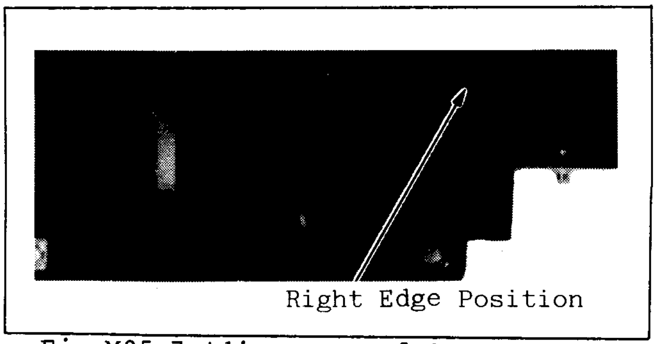

Right Edge Position

Fig.M35-7 Adjustment of Cassette Up Gears-(7)

1. Install the Main shaft Gear (L) Unit.

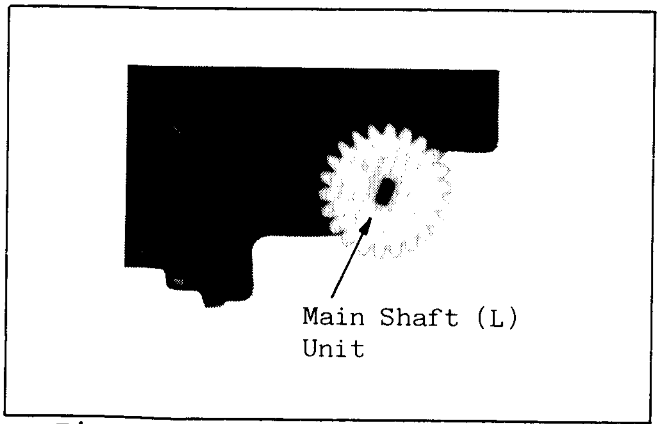

Main Shaft (L) Unit

Fig. M35-8 Adjustment of Cassette UP Gears-(8)

2. Install the wiper Gear (L) unit so that the projection (E) on the wiper Gear (L) unit meets the projection (F) on the Main Shaft Gear (L) Unit.
   At that time, Pin of Cassette holder-L should fit into the slot of wiper Gear (L).
   Then install the screw (B).

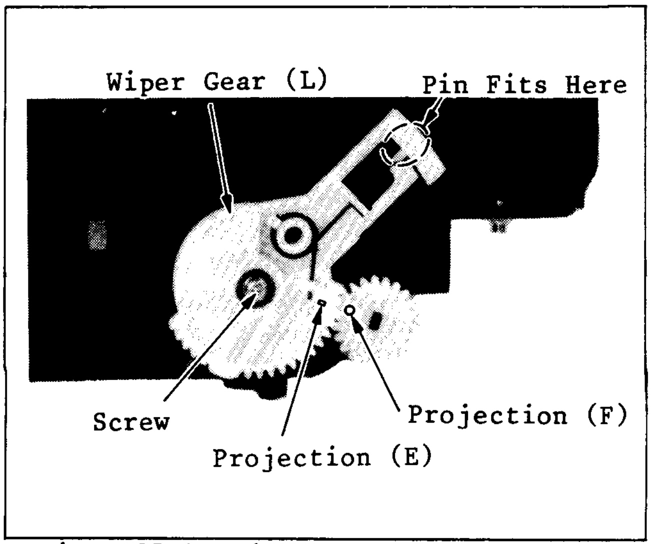

Wiper Gear (L)
Pin Fits Here
Screw
Projection (F)
Projection (E)

Fig. M35-9 Adjustment of Cassette Up Gears-(9)

3. Install the cassette compartment opener Lever as shown in Fig. M35-10. Ensure a portion of opener lever (G) slides into the opening beside Cassette door. Snap Cassette Compartment opener lever into place over its pin. Pull down on (H) to ensure Cassette door opens.

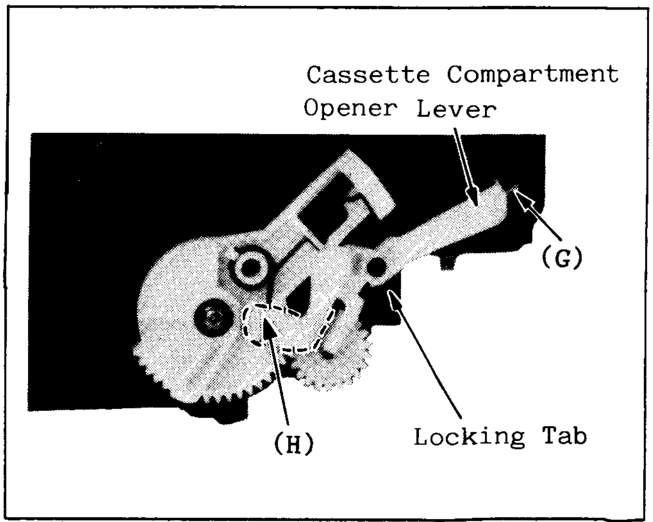

Cassette Compartment Opener Lever
(G)
(H)
Locking Tab

Fig. M35-10 Adjustment of Cassette Up Gears-(10)

18. ADJUSTMENT OF CASSETTE UP/DOWN SWITCH

* Equipment Required :
Fine Adjustment Screwdriver.....VFKS0136

1. Confirm that the Cassette Up Unit is in the full cassette up condition and then remove the Cassette Up Unit referring to removal procedure of Cassette Up Unit.
2. Confirm that the projection (F) on the wiper Arm Gear (R) Unit meets the apex of triangle of Cassette In Switch as shown in Fig. M35-11.
3. Slightly loosen the Screw (A) and insert the adjustment screwdriver into the hole (B).
4. Turn the adjustment screwdriver until projection (G) on the wiper Arm Gear (R) Unit meets the triangle of Cassette Up/Down Switch as shown in Fig. M35-11. Then confirm the Cassette Up/Down Switch turns ON and tighten screw (A).
5. Connect the connector P1551 on the connection C.B.A. Insert the cassette tape, then confirm cassette up and cassette down movement.

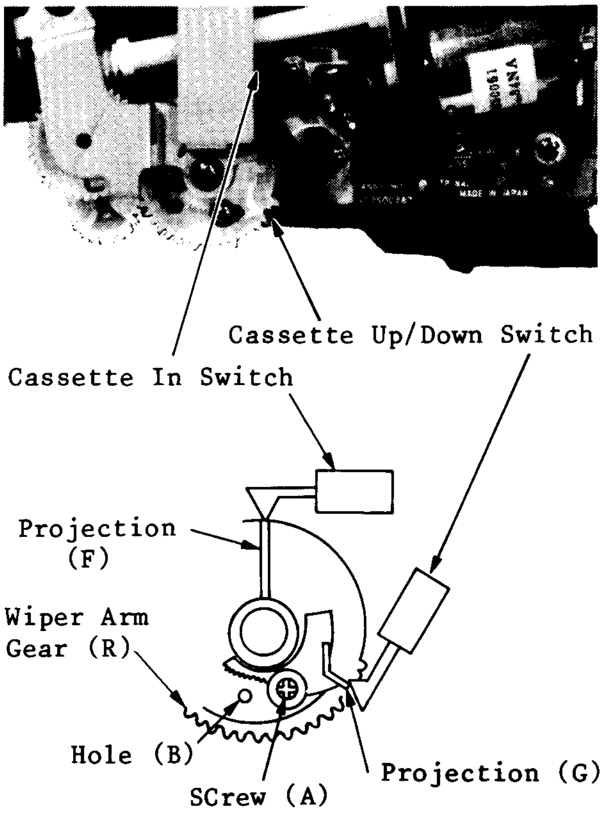
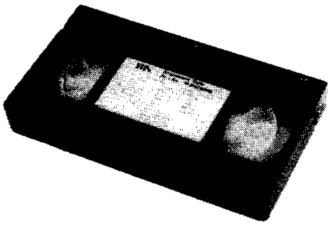
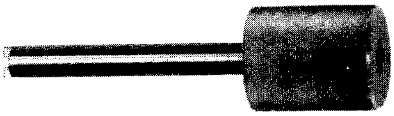
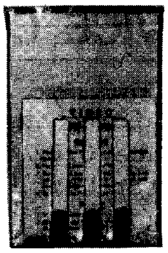
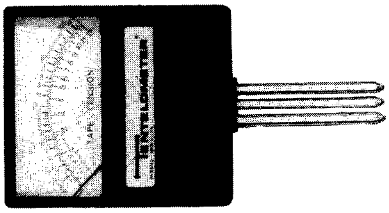
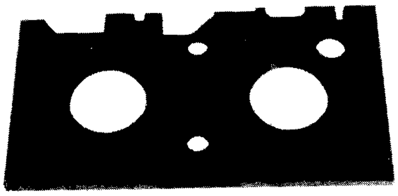
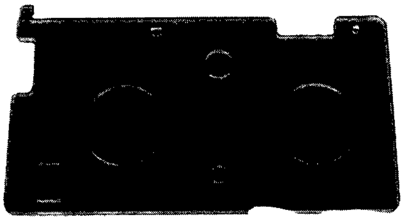
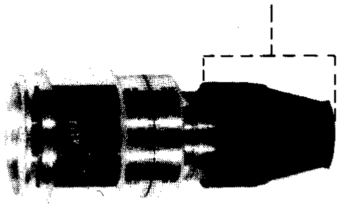
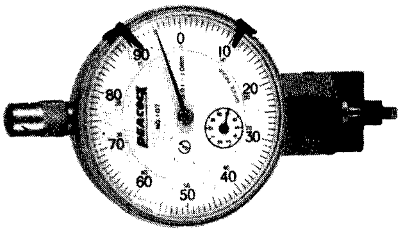
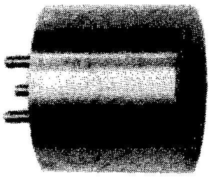
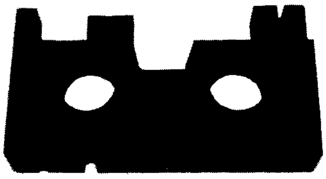
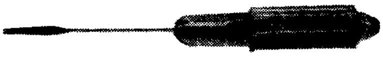
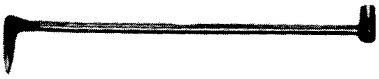
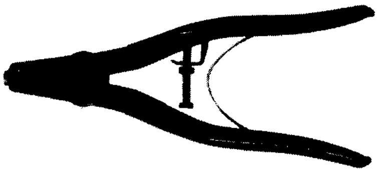
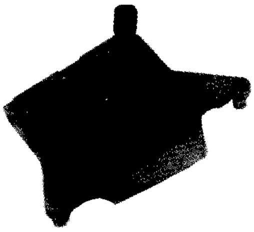
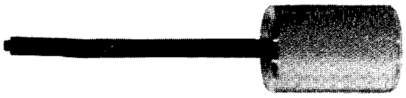
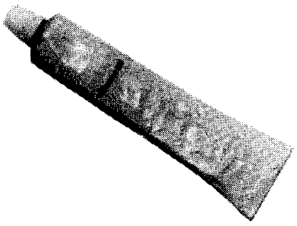

Cassette Up/Down Switch
Cassette In Switch
Projection (F)
Wiper Arm Gear (R)
Hole (B)
SCrew (A)
Projection (G)

Fig. M35-11 Adjustment of Cassette Up Gears

Servicing Fixtures & Tools

VFMS0001H6 VHF Alignment Tape 	**VFK0137** Post Adjustment Screwdriver 	**VFK27** Head Cleaning Stick 
Back Tension Meter (Tentelometer, Made in U.S.A.) 	**VFKS0010** Post Adjustment Plate 	**VFKS0002** Tension Post Adj. Plate 
VFK0133 Dial Torque Gauge **VFK0180** (Plastic Clamper Only) 	**VFKS0009** Reel Table Height Fixture 	**VFKS0003** H-Position Adj. Fixture
VFK0134 Adaptor for VFK0133 	**VFKS0004** Cassette Holder Fixture 	VFKS0031 V-Hold Adj. Tool 
VFKS0032 Lock Screw Wrench 	**VFK0144** Retaining Ring Remover (3mmϕ) **VFK0145** Retaining Ring Remover (4mmϕ) 	**VFKS0029** V-Stopper Adj. Fixture 
VFK0136 Fine Adjustment Screwdriver (3mmϕ) 	**MOR265** Molytone Grease 	

ELECTRICAL ADJUSTMENT PROCEDURES

SERVICE CAUTION

When servicing the Luminance, Chrominance C.B.A.s and the TV Demodulator Unit, take notice of following items.

A. Luminance and Chrominance C.B.A.s

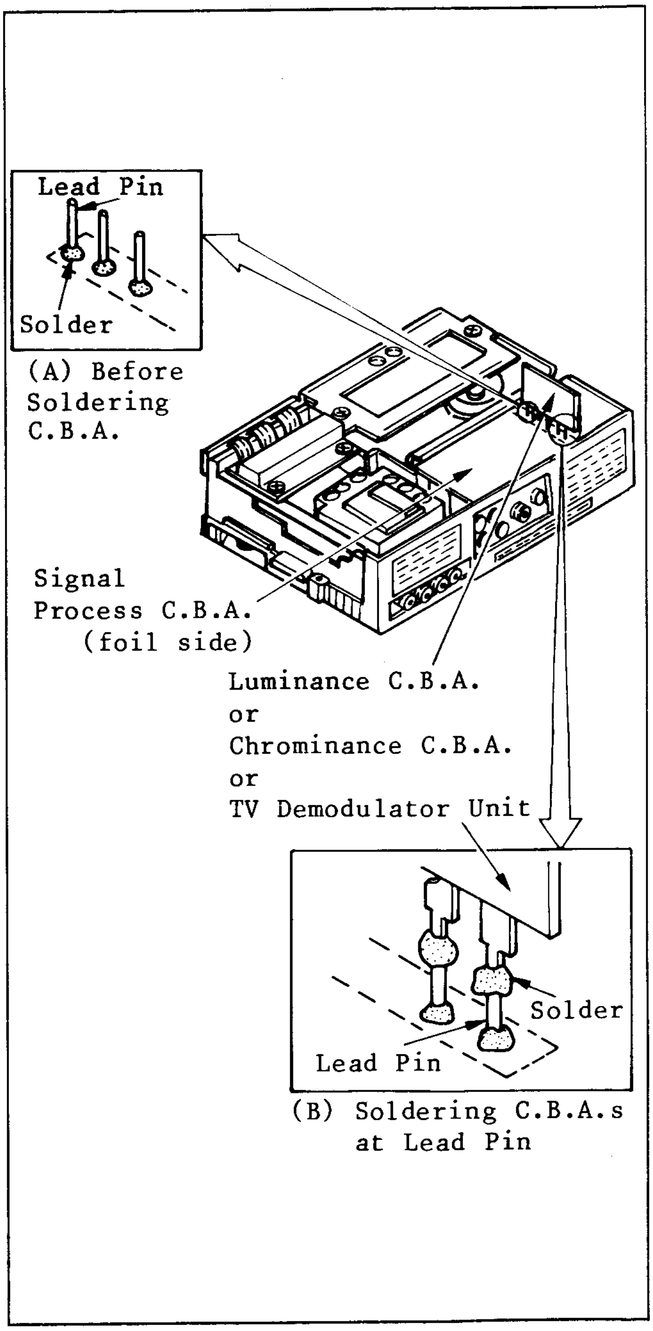
Do not bend or spread apart the Luminance and Chrominance C.B.A.s. By doing so, damage to the Signal Process C.B.A. or pins on the C.B.A.s may result.

B. Adjustment on these C.B.A.s and TV Demodulator Unit

Adjustment can be performed without removing these C.B.A.s or the TV Demodulator Unit.

C. Signal check and Replacement of parts on these C.B.A. and the TV Demodulator Unit

1. Remove TV Demodulator or one of these C.B.A.s, then insert the Lead Pins and solder on the foil side of Signal Process C.B.A. as shown in (A) in figure.
2. Solder the TV Demodulator Unit or the extracted C.B.A. at the Pins on the Signal Process C.B.A. as shown in (B) in figure.
   Ensure that the pins numbers are aligned with their respective PC Board Pin locations.
3. Perform the signal check or replace parts.
4. After completion, restore to the original assembled condition.


Lead Pin
Solder
Signal Process C.B.A. (foil side)
Luminance C.B.A. or Chrominance C.B.A. or TV Demodulator Unit
Solder
Lead Pin

(A) Before Soldering C.B.A.

(B) Soldering C.B.A.s at Lead Pin

NOTE:
When troubleshooting the Luminance or Chrominance C.B.A. and soldering to the foil side of Signal Process C.B.A., remove the metal P.C.Board angle.

1. TEST EQUIPMENT

To perform the electrical adjustments completely, the following equipment is required.

1. DVM (Digital Volt Meter)
   Voltage Range: 0.001 - 50V
2. Dual-trace Oscilloscope
   Voltage Range: 0.001 - 50V/Div.
   Frequency Range: DC - 15MHz
   Probes: 10:1, 1:1
3. Frequency Counter
   Frequency Range: 0 - 150MHz
4. Signal Generator
   Sinewave: 0 - 10MHz
5. AC Millivolt Meter
   Voltage Range: 0 - 3mVrms.
6. Tuning Amp.
7. VIF Sweep Generator/Trap Adjuster
8. Spectrum Analyzer
9. NTSC Video Pattern Generator
10. DC Power Supply Unit
    Voltage: 0 - 15V DC
11. Variable Attenuater
    Attenuate: (+- 0) dB - -50dB
12. Monitor Scope
13. Color TV Receiver or Monitor
14. V-Hold ADJ. Tool
    (VFKS0031)
15. Plastic Tip Driver and Non-Metal Driver
16. Lock Screw Wrench
    (VFKS0032)
17. Isolation Transformer
18. VHS Alignment Tape
    (VFMS0001H6)

Start Counter Reading	0 (0)	0020 ± 8 (008 ± 6)	0135 ± 12 (060 ± 6)	0240 ± 20 (109 ± 10)
Video	Blank	Monoscope	Color Bars	Multi-Burst
Audio	Blank	6kHz (MONO)	3kHz (STEREO)	1kHz (MONO)

Fig. E1

2. ADJUSTMENT PROCEDURES

These adjustment procedures consist of th following sections.

1. Servo Section
2. Audio Section
3. Luminance and Chrominance Section
4. System Control Section
5. TV Demodulator Section
6. IR Wireless Receiving Detector Section (PV-1530)

2-1. SERVO SECTION

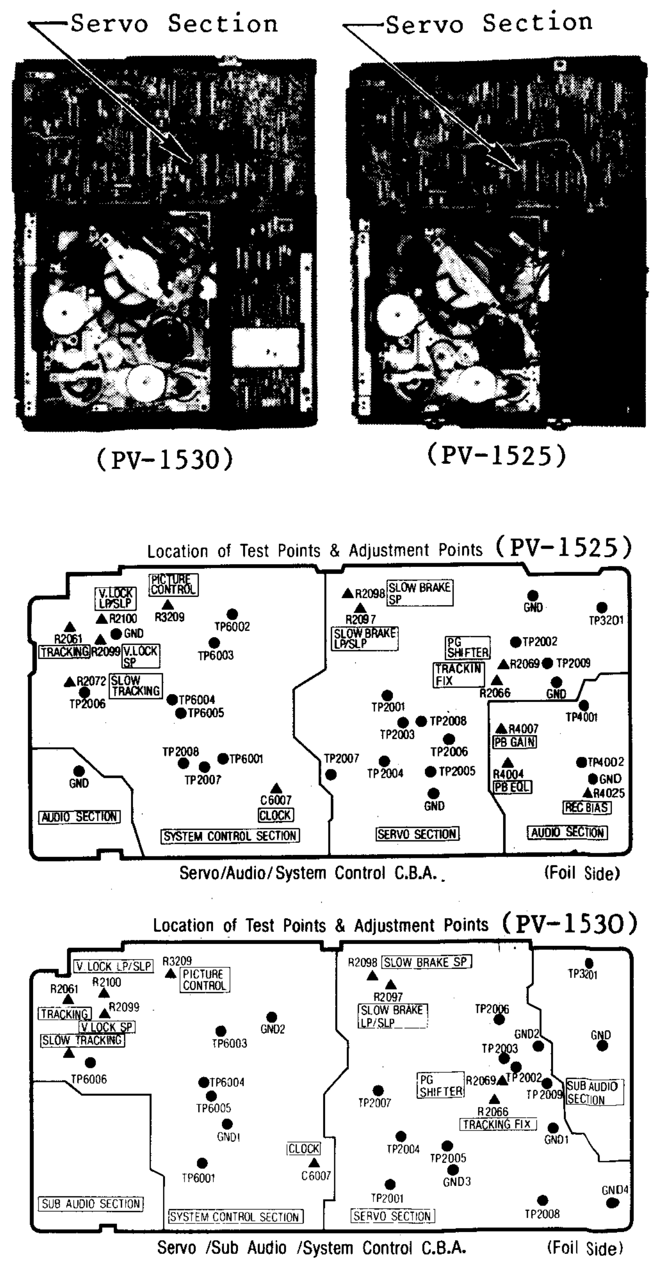

Servo Section
Servo Section
(PV-1530)
(PV-1525)
Location of Test Points & Adjustment Points (PV-1525)
V.LOCK LP/SLP
PICTURE CONTROL
R2100
R3209
TP6002
R2061
GND
TRACKING
R2099
V.LOCK SP
TP6003
R2072
SLOW TRACKING
TP2006
TP6004
TP6005
TP2008
TP6001
TP2007
GND
C6007
CLOCK
AUDIO SECTION
SYSTEM CONTROL SECTION
R2098
SLOW BRAKE SP
R2097
SLOW BRAKE LP/SLP
GND
TP3201
PG SHIFTER
TP2002
TRACKIN FIX
R2069
TP2009
R2066
GND
TP2001
TP2008
TP2003
TP4001
R4007
PB GAIN
TP2006
TP2007
TP2004
TP2005
R4004
PB EQL
TP4002
GND
R4025
REC BIAS
GND
SERVO SECTION
AUDIO SECTION
Servo/Audio/System Control C.B.A.
(Foil Side)
Location of Test Points & Adjustment Points (PV-1530)
V LOCK LP/SLP
R3209
PICTURE CONTROL
R2061
R2100
R2099
TRACKING
V LOCK SP
SLOW TRACKING
GND2
TP6003
TP6006
TP6004
TP6005
GND1
CLOCK
C6007
TP6001
SUB AUDIO SECTION
SYSTEM CONTROL SECTION
R2098
SLOW BRAKE SP
R2097
SLOW BRAKE LP/SLP
TP3201
TP2006
GND2
GND
TP2003
PG SHIFTER
R2069
TP2002
TP2009
SUB AUDIO SECTION
TP2007
R2066
TRACKING FIX
GND1
TP2004
TP2005
GND3
TP2001
GND4
TP2008
SERVO SECTION
Servo /Sub Audio /System Control C.B.A.
(Foil Side)

Fig. E2

2-1-1. HEAD SWITCHING POSITION ADJUSTMENT

Test Points: TP2003, TP3201
Adjustment : R2069 (PG SHIFTER)

1. Playback color bar section of the alignment tape.
2. Connect the scope CH 1 to TP3201 on the Audio Jack Section and CH 2 to TP2003 on the Servo Section. Set the scope to the CHOP mode.
3. Also set the scope to the Delay mode or expand the vertical interval of the signal from TP3201.
4. Adjust the PG SHIFTER (R2069) so that the head switching point is 6 (+- 1) H before the start of vertical sync as shown below.

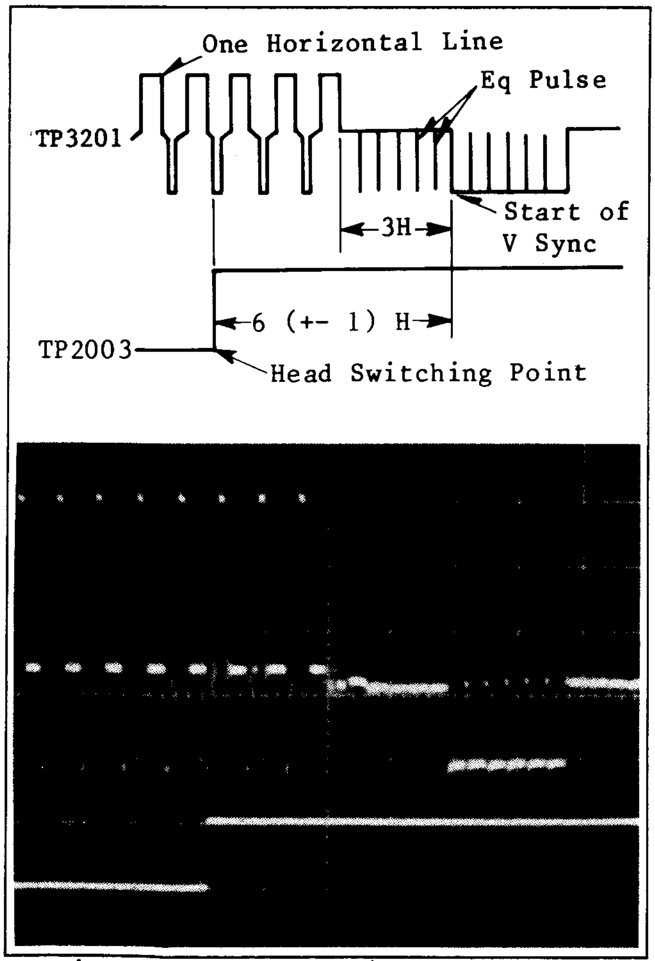


Fig. E3 TP3201 0.5V/0.1msec. div.
TP2003 5V/0.1msec. div.

5. Change the slope selector on the scope from "+" to "-" and make sure that the other switching point is also 6 (+- 1) H before the beginning of vertical sync.

2-1-2. TRACKING FIX ADJUSTMENT

Test Points: TP2002, TP2003
Adjustment : R2066 (TRACKING FIX)

1. Supply a video signal to the Video Input on the rear panel or tune in a local TV program.
2. Set the Tracking Control on the front panel to the center detent point.
3. Insert a cassette tape and make a recording in the SP mode for a few minutes.
4. Playback the portion just recorded.
5. Connect the scope CH1 to TP2003 and CH2 to TP2002 on the Servo Section.
6. Adjust the TRACKING FIX (R2066) so that the T is 7.3 (+- 0.4) msec.

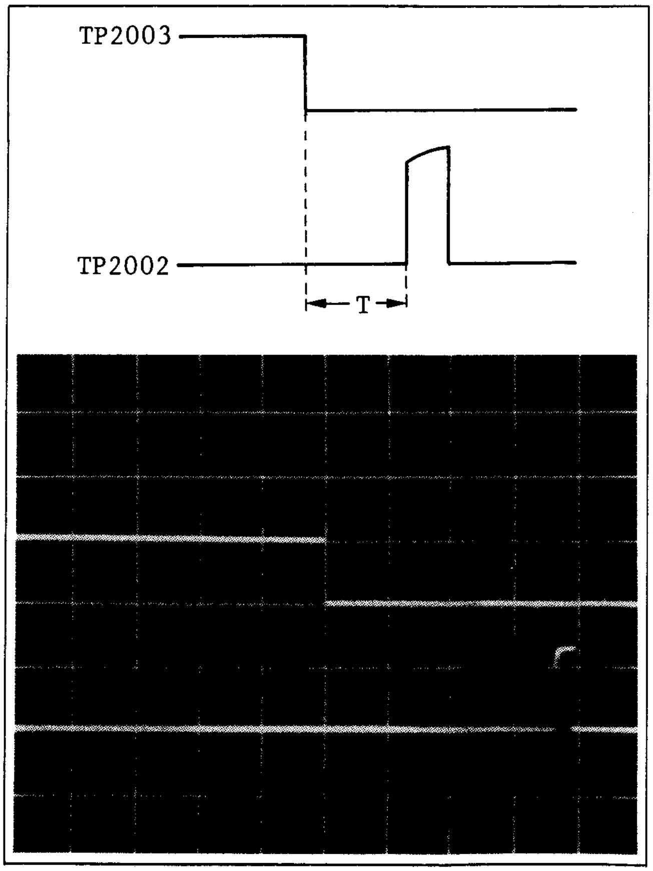


Fig. E4 TP2003 5V/0.5msec. div.
TP2002 1V/0.5msec. div.

2-1-3. SLOW BRAKE ADJUSTMENT

Test Points : TP2006, TP2007
Adjustments : R2098 (SLOW BRAKE-SP)
R2097 (SLOW BRAKE-SLP)

1. Supply a video signal to the video Input on the rear panel or tune in a local TV program.
2. Insert a cassette tape and make a recording in the SP mode for a few minutes.
3. Playback the portion just recorded.
4. Press the slow/FA key on the front panel.
5. Connect the scope CH1 to TP2007 and CH2 to TP2006 on the Servo Section. Set the scope to the CHOP mode.
6. Adjust the SLOW BRAKE-SP (R2098) so that the A-portion is as shown below.

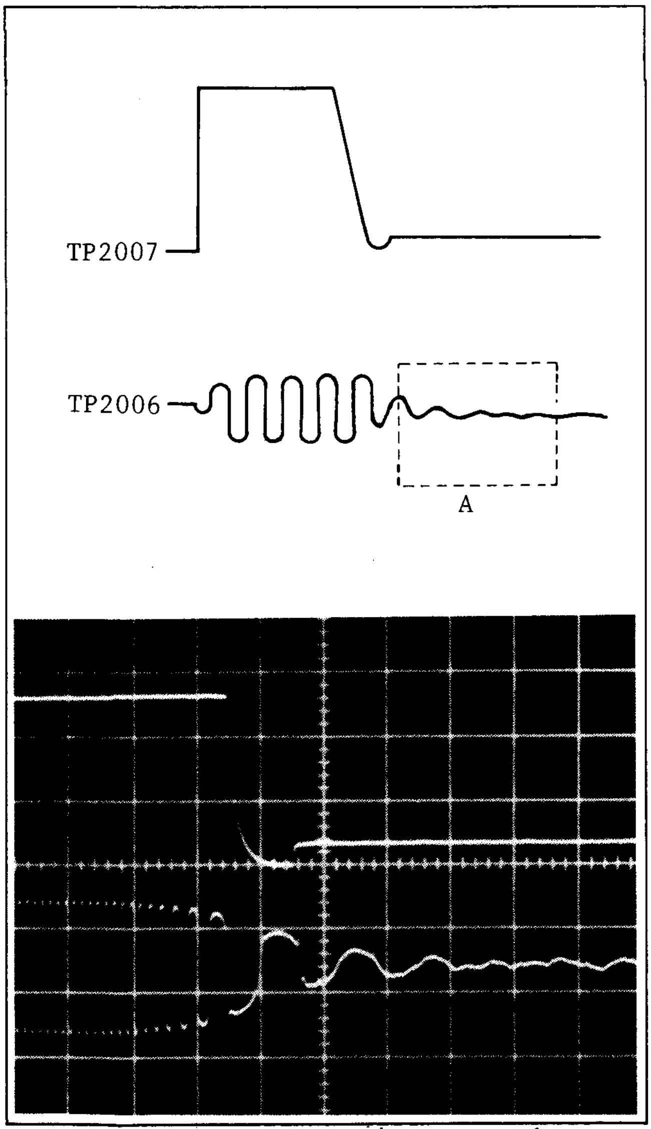


Fig. E5 TP2007 0.2V/10msec. div.
TP2006 0.5V/10msec. div.

7. In case of misadjustment, A-portion is as shown below.

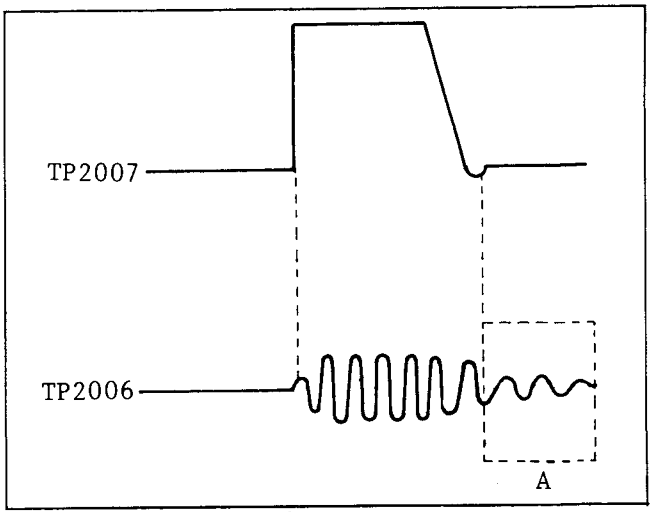


Fig. E6

8. Then, change to SLP and make a recording for a few minutes.
9. Playback the portion just recorded.
10. Press the Slow/FA key on the front panel.
11. Adjust the slow BRAKE-SLP (R2097) same as in the SP mode.

2-1-4. V LOCK ADJUSTMENT

Equipment : TV Monitor
Adjustments : R2100 (V-LOCK-SLP)
R2099 (V-LOCK-SP)

1. Supply a color bar signal to the Video Input on the rear panel or tune in a local TV program.
2. Insert a cassette tape and make a recording in the SLP mode for a few minutes.
3. Playback the portion just recorded.
4. Set the slow tracking VR on the front panel to the center detent point.
5. Push the PAUSE/STILL key.
6. Adjust the V-LOCK-SLP (R2100) on the System Control Section so that the center of picture is most stable.

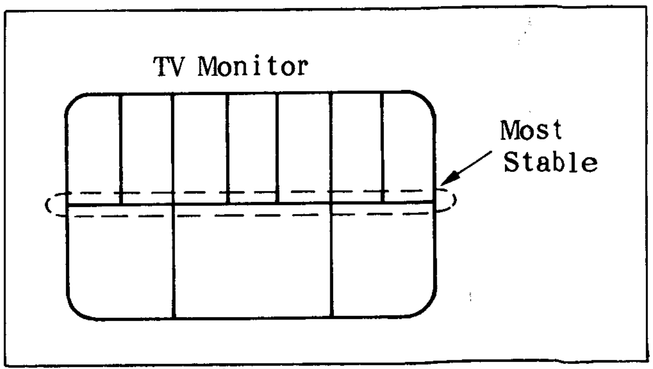


Fig. E7

7. Place the unit in SP mode and make a recording for a few minutes.
8. Playback the portion just recorded, and push the PAUSE/STILL key.
9. Adjust the V-LOCK-SP (R2099) on the System Control Section so that the center of picture is most stable.

2-2. AUDIO SECTION

A. Adjustment for PV-1525

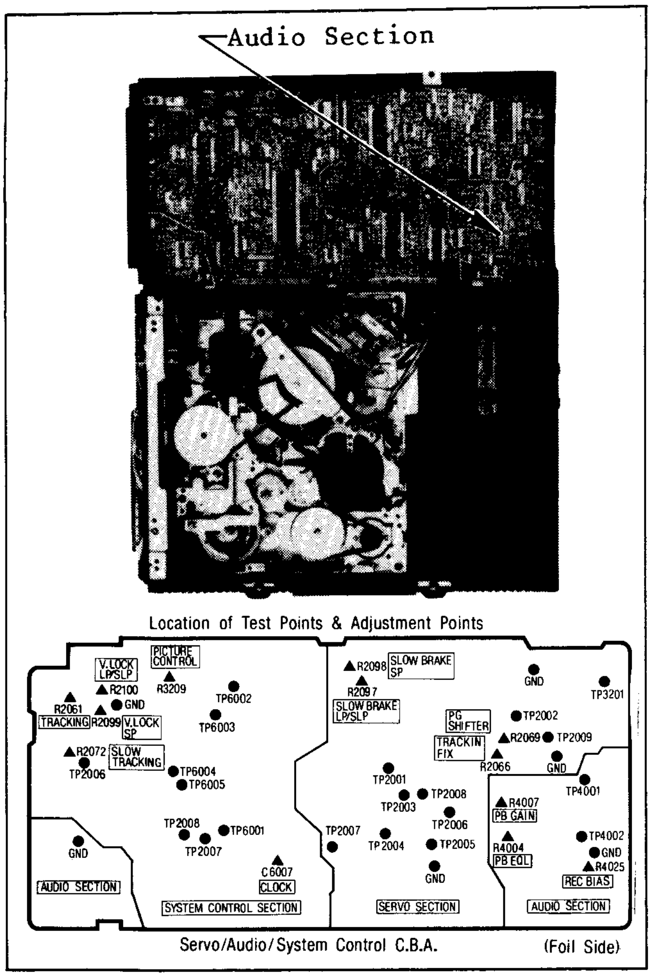

Audio Section
Location of Test Points & Adjustment Points
V.LOCK LP/SLP
PICTURE CONTROL
R2100
R3209
TP6002
R2061
GND
TRACKING
R2099
V.LOCK SP
TP6003
R2072
SLOW TRACKING
TP2006
TP6004
TP6005
TP2008
TP6001
TP2007
GND
C6007
CLOCK
AUDIO SECTION
SYSTEM CONTROL SECTION
R2098
SLOW BRAKE SP
R2097
SLOW BRAKE LP/SLP
GND
TP3201
PG SHIFTER
TP2002
TRACKIN FIX
R2069
TP2009
R2066
GND
TP2001
TP2008
TP2003
TP4001
R4007
PB GAIN
TP2006
TP2007
TP2004
TP2005
R4004
PB EQL
TP4002
GND
R4025
GND
REC BIAS
SERVO SECTION
AUDIO SECTION
Servo/Audio/System Control C.B.A.
(Foil Side)

Fig. E8

2-2-1. BIAS CURRENT ADJUSTMENT

Test Point: Audio Head Terminal
Adjustment: R4025 (REC BIAS)

1. Plug in a phono plug to the Audio Input on the rear panel, but do not supply the Audio signal.
2. Insert a cassette and make a recording in the SP mode.
3. Connect the AC Millivolt Meter or scope as shown in Fig. E9.

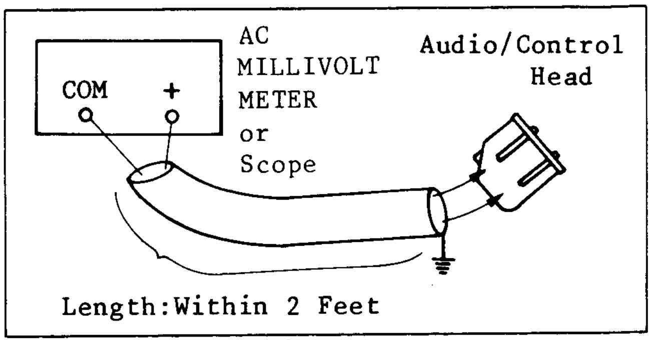
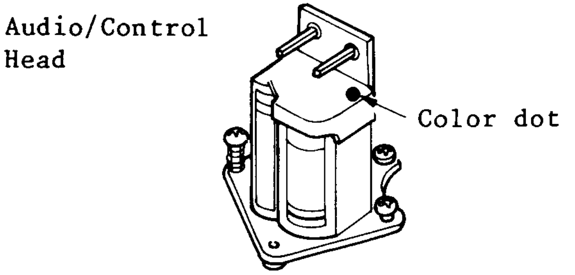

COM
+
AC MILLIVOLT METER or Scope
Audio/Control Head
Length:Within 2 Feet

Fig. E9

4. While the recording is taking place, adjust the REC BIAS (R4025) on the Audio Section so that the voltage is within the specification. (Specification should be decided by the color of the dot on A/C Head.)

COLOR DOT	ADJUSTMENT VOLTAGE
NO COLOR DOT	2.4 (+- 0.05) mVrms or 6.8 (+- 0.1) mVp-p
RED COLOR	2.1 (+- 0.05) mVrms or 5.9 (+- 0.1) mVp-p


Audio/Control Head
Color dot

Adjustment should be made depending on the color of the dot on the A/C head as above.

Fig. E10

5. Remove the AC Millivolt Meter or scope.

Note:
For Service replacement, A/C Head without color dot is supplied.

2-2-2. PLAYBACK GAIN AND EQUALIZATION ADJUSTMENT

Test Point : TP4001
Adjustments: R4007 (PB GAIN)
R4004 (PB EQL)

1. Supply a sinewave signal (1kHz and 5kHz, -30dB, 89mVp-p) to the Audio Input on the rear panel.
2. Supply the video signal to the Video Input on the rear panel.
3. Connect the AC Millivolt Meter or scope to TP4001 on the Audio Section

4. Insert a cassette tape and make a recording 1kHz signal first then 5kHz signal in the SP mode. Read the voltage of 1kHz.
5. Playback the 1kHz portion just recorded.
6. Adjust PB GAIN (R4007) so that the voltage of playback is equal to that of recording.
7. Adjust the PB EQL (R4004) so that the 1kHz and 5kHz outputs are balanced.
8. Remove the AC Millivolt Meter or scope.

B. Adjustment for PV-1530

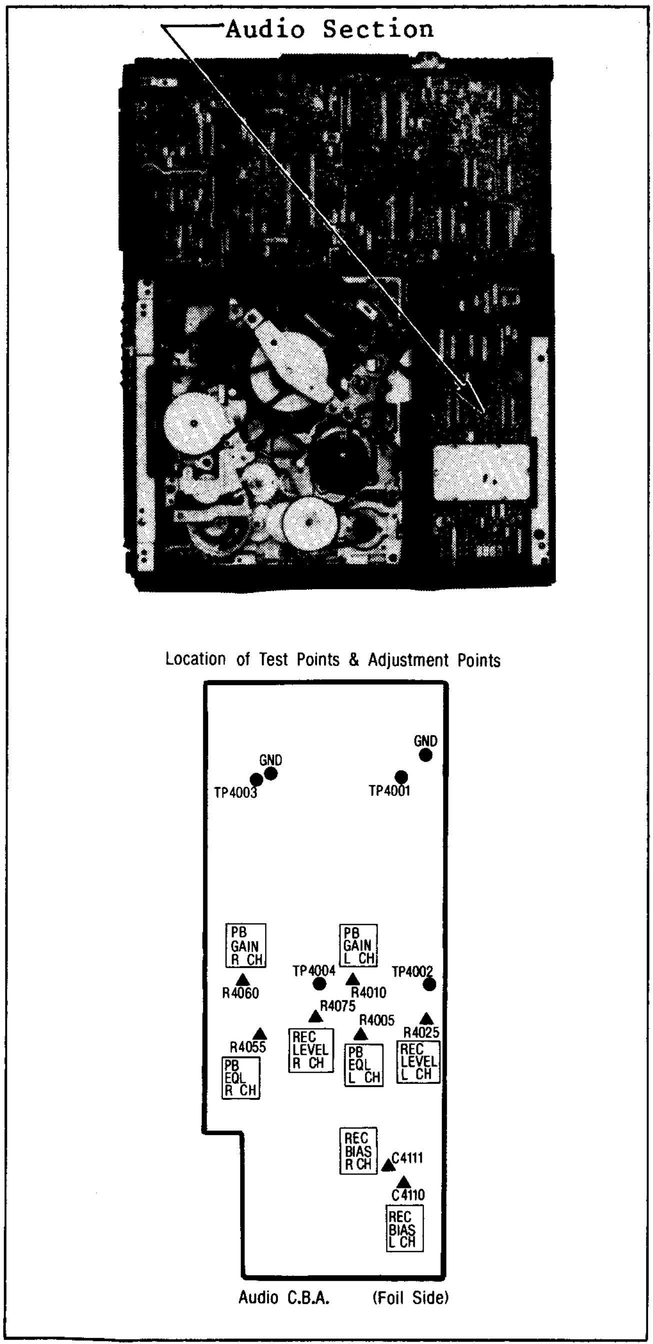

Audio Section
Location of Test Points & Adjustment Points
GND
TP4003
GND
TP4001
PB GAIN R CH
PB GAIN L CH
TP4004
TP4002
R4060
R4010
R4075
R4005
R4025
R4055
REC LEVEL R CH
PB EQL L CH
REC LEVEL L CH
PB EQL R CH
REC BIAS R CH
C4111
C4110
REC BIAS L CH
Audio C.B.A. (Foil Side)

Fig. E11

2-2-3. BIAS CURRENT ADJUSTMENT

Test Point: Audio Head Terminal (L, R)
Adjustment: C4110 (L CH, REC BIAS)
C4111 (R CH, REC BIAS)

1. Plug in a phono plug to the Audio Input, but do not supply any audio signal to the AUDIO INPUT on the rear panel.
2. Insert a cassette tape and make a recording in the SP mode.
3. Connect the AC Millivolt Meter or scope as shown in Fig. E12.

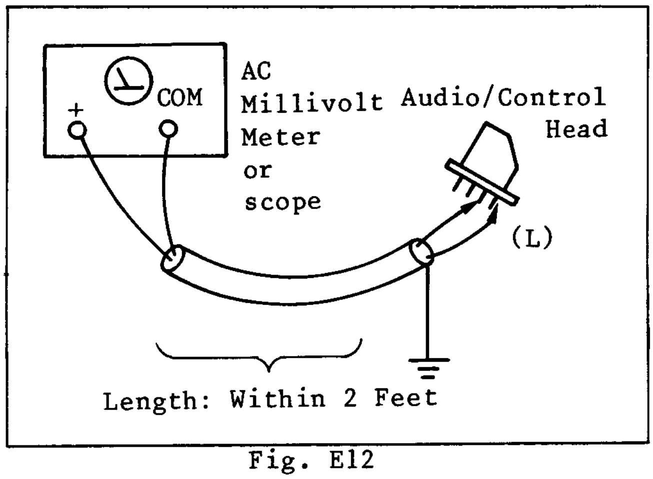

+
COM
AC Millivolt Meter or scope
Audio/Control Head
(L)
Length: Within 2 Feet

Fig. E12

4. While the recording is taking place, adjust the L CH REC BIAS (C4110) on the Audio Section so that the voltage is within the specification.
5. Change the connected point of the AC Millivolt Meter or scope as shown below.

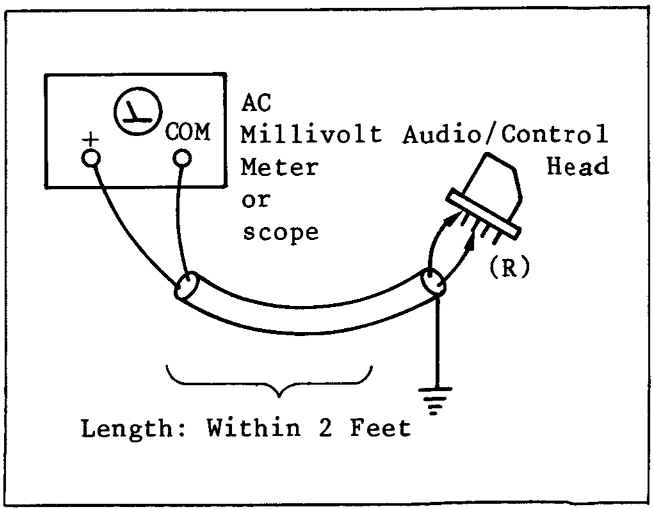
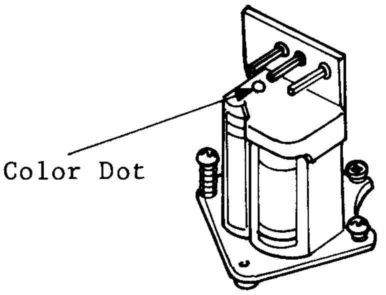

+
COM
AC Millivolt Meter or scope
Audio/Control Head
(R)
Length: Within 2 Feet

Fig. E13

6. During recording, adjust the R CH REC BIAS (C4111) on the Audio Section so that the voltage is within the specification. (Specification should be decided by the color of the dot on A/C Head.)

COLOR DOT	ADJUSTMENT VOLTAGE
NO COLOR DOT	1.5 (+- 0.05) mVrms or 4.3 (+- 0.1) mVp-p
WHITE COLOR	



Adjustment should be made depending on the color of the dot on the A/C head as above.

Fig. E14

7. Remove the AC Millivolt Meter or scope.

Note:
For Service replacement, A/C Head without color dot is supplied.

2-2-4. PLAYBACK GAIN ADJUSTMENT

Test Points:	TP4001 (L CH) TP4003 (R CH)
Adjustments:	R4010 (PB GAIN-L CH) R4060 (PB GAIN-R CH)

1. Playback Multi-Burst section (1kHz Audio) of the alignment tape (VFMS 0001H6).
2. Connect the scope CH1 to TP4001 and CH2 to TP4003 on the Audio Section
3. Set the DOLBY NR Switch on the front panel to OFF.
4. Set the scope to CH1 mode and adjust the PB GAIN-L CH (R4010) on the Audio Section so that the level of waveform is 300 (+- 15) mVp-p.

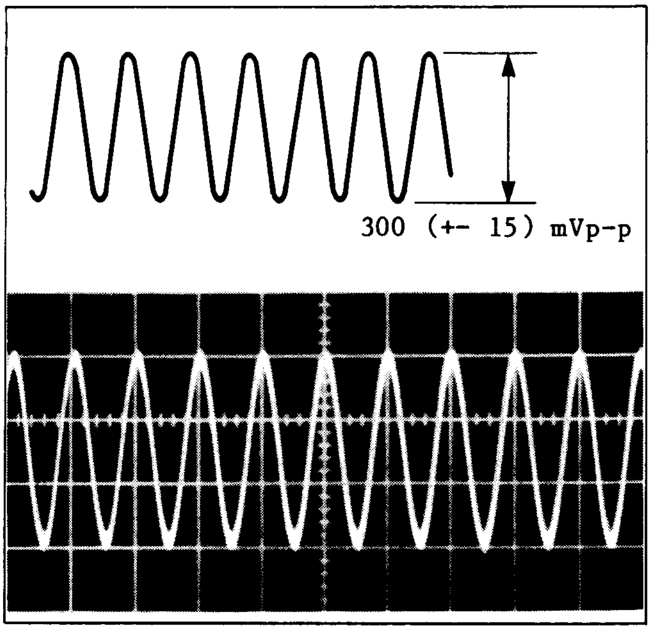


Fig. E15 TP4001 0.1V/1msec. div.

5. Set the scope to CH2 mode and adjustment PB GAIN-R CH (R4060) on the Audio Section so that the level of waveform is 300 (+- 15) mVp-p.

2-2-5. Recording Gain Adjustment

Test Points :	TP4001, TP4003
Adjustments :	R4025 (REC LEVEL-L CH) R4075 (REC LEVEL-R CH)

(L Channel)

1. Connect the Signal Generator to AUDIO IN (L) jack on the rear panel.
2. Supply a sinewave signal (1kHz, -10dB, 890mVp-p) from the Signal Generator.
3. Set the DOLBY NR Switch on the front panel to OFF.
4. Place the unit in SP recording mode.
5. Connect the scope to TP4001 on the Audio Section and set the recording level at approx. 1.3 Vp-p as a starting point of this adjustment.
6. Playback the portion just recorded and read the level of Playback.
7. Confirm that the Recording level and Playback level are the same level.
8. If the Recording level and Playback level aren't the same. During Recording , turn the REC LEVEL-L (R4025) to slightly increase or decrease the signal level.
9. Repeat above step 4 and 8 until Recording level and Playback level are the same.

(R Channel)

1. Connect the signal Generator to AUDIO IN (R) jack on the rear panel.
2. Supply a sinewave signal (1KHz, -10dB, 890mVp-p) from the Signal Generator.
3. Place the unit in SP recording mode.
4. Connect the scope to TP4003 on the Audio Section and set the recording level at approx. 1.3 Vp-p as a starting point of this adjustment.
5. Playback the portion just recorded and read the level of playback.
6. Adjust the REC LEVEL-R (R4075) as is done in L channel adjustment.

2-2-6. Overall Frequency Response Adjustment

Test Point : TP4001 (L CH)
TP4003 (R CH)
Adjustments: R4005 (PB EQ-L CH)
R4055 (PB EQ-R CH)

1. Supply the color bar signal to the Video Input on the rear panel.
2. Supply a sinewave signal (1KHz and 5KHz, 40dB, 28mVp-p) to either Audio Input L CH or R CH on the rear panel.
3. Connect the AC Millivolt Meter to TP4001 on the Audio Section.
4. Insert a cassette tape and make a recording in SP mode 1KHz first, then 5KHz.
5. Connect the phono plug to Audio Out jack (R CH).
6. Playback the portion just recorded.
7. Adjust PB EQ-L CH (R4005) on the Audio Section so that the 1KHz and 5KHz outputs are balanced.
8. Then, connect the AC Millivolt Meter to TP4003 on the Audio Section.
9. Remove the phono plug from Audio Out jack (R CH), then connect the Phono plug to Audio Out jack (L CH).
10. Playback the portion just recorded.
11. Adjust the PB EQ-R CH (R4055) on the Audio Section so that the 5KHz output is 0 (+- 0.5)dB of 1KHz output.
12. Remove the AC Millivolt Meter and the Phono plug.

2-3. LUMINANCE AND CHROMINANCE SECTION

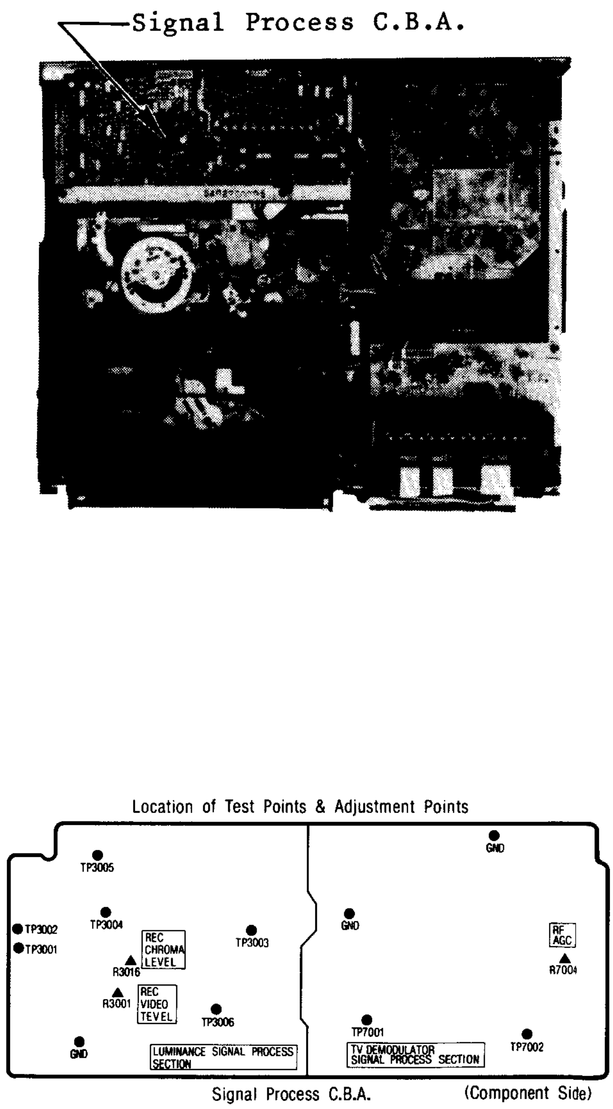

Signal Process C.B.A.
Location of Test Points & Adjustment Points
TP3005
TP3002
TP3001
TP3004
REC CHROMA LEVEL
R3016
TP3003
R3001
REC VIDEO TEVEL
TP3006
GND
LUMINANCE SIGNAL PROCESS SECTION
GND
GND
RF AGC
R7004
TP7001
TV DEMODULATOR SIGNAL PROCESS SECTION
TP7002
Signal Process C.B.A.
(Component Side)

Fig. E16

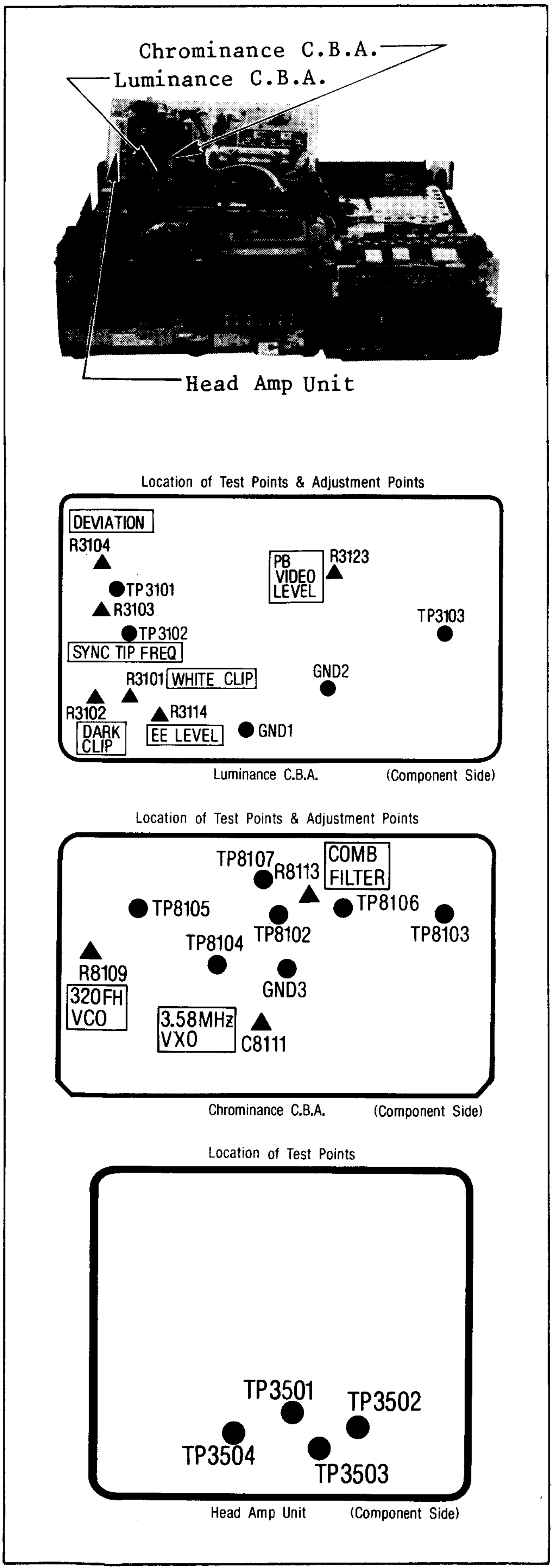

Chrominance C.B.A.
Luminance C.B.A.
Head Amp Unit
Location of Test Points & Adjustment Points
DEVIATION
R3104
TP3101
R3103
TP3102
SYNC TIP FREQ
R3101
WHITE CLIP
R3102
DARK CLIP
R3114
EE LEVEL
GND1
PB VIDEO LEVEL
R3123
TP3103
GND2
Luminance C.B.A.
(Component Side)
Location of Test Points & Adjustment Points
TP8107
R8113
COMB FILTER
TP8105
TP8106
TP8103
TP8104
TP8102
R8109
320FH VCO
GND3
3.58MHz VXO
C8111
Chrominance C.B.A.
(Component Side)
Location of Test Points
TP3501
TP3502
TP3504
TP3503
Head Amp Unit
(Component Side)

Fig. E17

2-3-1. E-E LEVEL ADJUSTMENT

Test Point: TP3004
Adjustment: R3114 (E-E LEVEL)

1. Supply NTSC Color Bar Signal W/White Window (1Vp-p) to the Video Input on the rear panel.
2. Connect the scope to TP3004 on the Luminance Signal Process Section.
3. Place the unit in STOP mode.
4. Adjust the E-E LEVEL (R3114) on the Luminance C.B.A. so that the video level is 2.0 (+- 0.1) Vp-p.

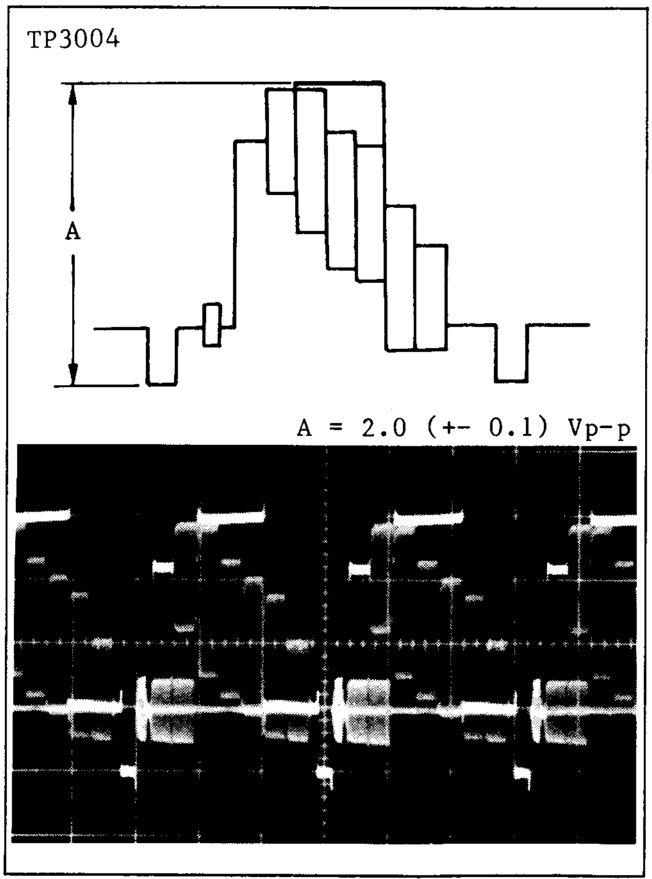


Fig. E18 TP3004 0.5V/20 u-sec. div.

2-3-2. SYNC TIP FREQUENCY AND DEVIATION ADJUSTMENT

Test Points: TP3502, TP3503, TP3002
Adjustments: R3103 (SYNC TIP FREQ)
R3104 (DEVIATION)

(A-1, Sync Tip Frequency Adjustment)

1. Plug in a phono plug to the Video Input on the rear panel, but do not supply video signal.

2. Connect the frequency counter to TP3002 on the Luminance Signal Process Section.
3. Insert a cassette tape and place the unit in SP REC mode.
4. Adjust the SYNC TIP FREQ (R3103) so that the frequency is 3.4 (+- 0.04) MHz.
5. Remove the frequency counter.

(A-2, Deviation Adjustment)

6. Turn the WHITE CLIP (R3101) and the DARK CLIP (R3102) to fully counterclockwise from the component side.
7. Turn the REC VIDEO LEVEL (R3001) to fully counterclockwise and the REC CHROMA (R3016) to fully clockwise from the component side.
8. Connect a signal generator (sinewave) to TP3001 through the resistor (1kΩ). Set the frequency and the output level of the signal generator.
   Frequency : 4.35 (+- 0.04) MHz
   Output Level : 0.1Vp-p

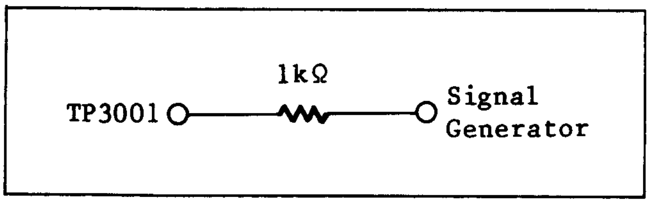

1kΩ
TP3001
Signal Generator

Fig. E19

9. Supply an NTSC Color Bar Signal (1Vp-p) to the Video Input on the rear panel.
10. Connect the scope to TP3503 (HOT) and TP3502 (GND) on the Head Amp Section. Use TP3006 as a trigger.
11. Turn the DEVIATION (R3104) to fully clockwise from the component side. Then slowly adjust the DEVIATION (R3104) so that maximum inner beat is produced as shown below.

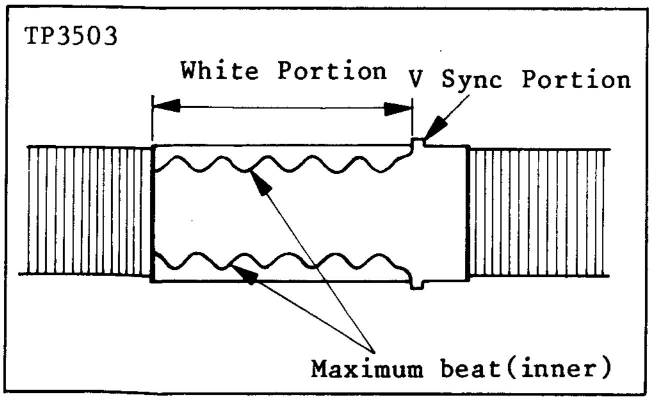

TP3503
White Portion
V Sync Portion
Maximum beat(inner)

Fig. E20

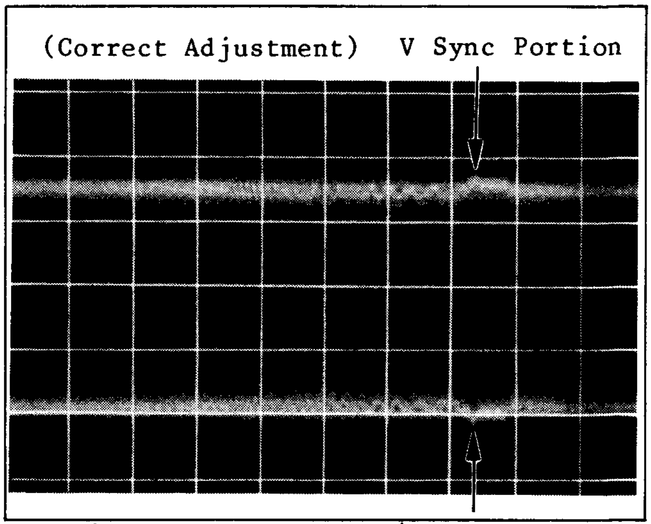


Fig. E21 TP3503 50mV/2msec. div.

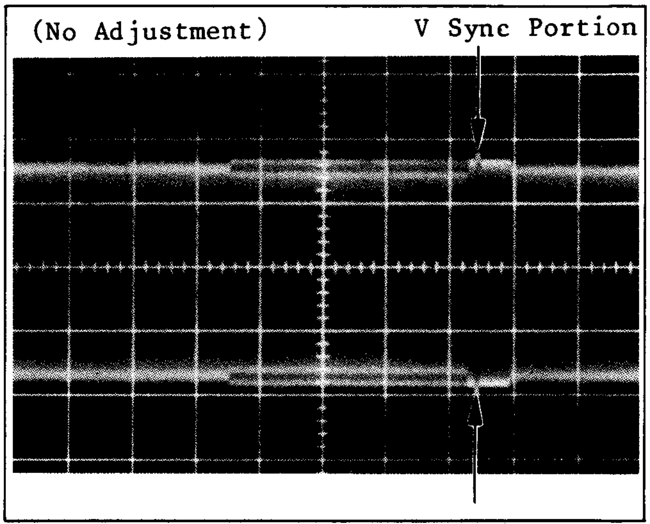


Fig. E22 TP3503 50mV/2msec. div.

Note : Inner beat is used for this adjustment but not outer beat as shown below.

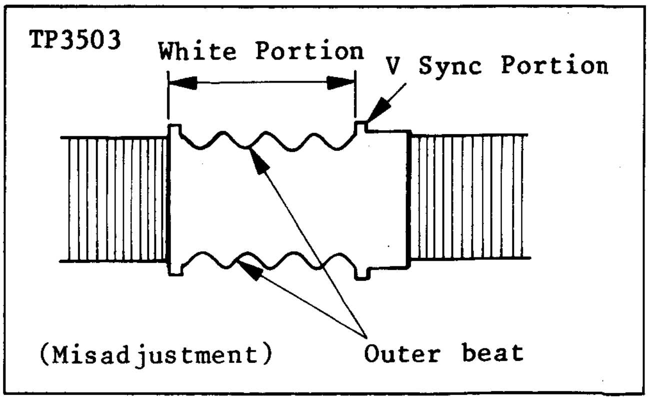

TP3503
White Portion
V Sync Portion
(Misadjustment)
Outer beat

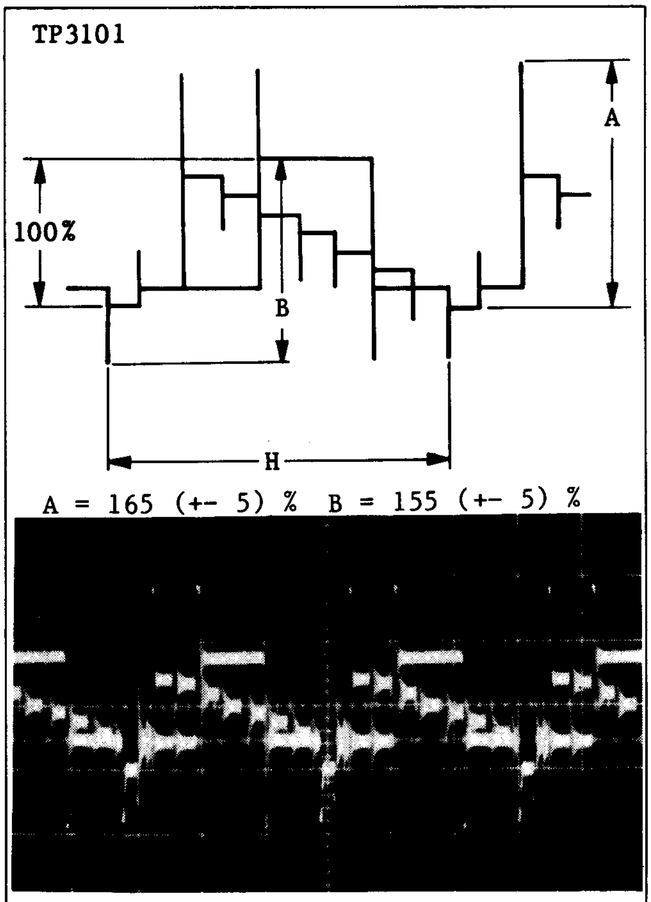
Fig. E23

12. Remove the resistor and a signal generator.
13. Make WHITE and DARK CLIP adjustment and Recording Current adjustment.

2-3-3. WHITE AND DARK CLIP ADJUSTMENT

Test Point : TP3101
Adjustments: R3101 (WHITE CLIP)
R3102 (DARK CLIP)

1. Supply an NTSC Color Bar Signal W/White Window to the Video Input on the rear panel.
2. Connect the scope to TP3101 on the Luminance C.B.A.
3. Place the unit in SP REC mode.
4. Adjust the WHITE CLIP (R3101) and the DARK CLIP (R3102) on the Luminance C.B.A. so that the overshoot and undershoot are as shown below.



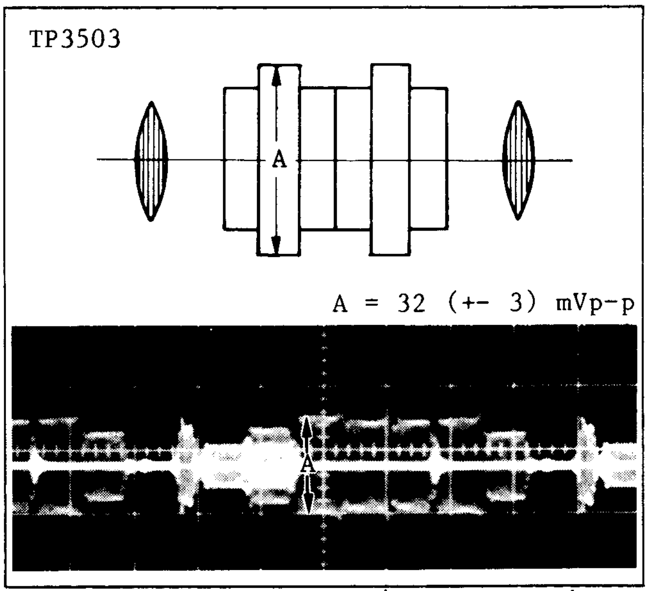
A = 165 (+- 5) % B = 155 (+- 5) %

Fig. E24 TP3101 0.2V/20 u-sec. div.

2-3-4. RECORDING CURRENT ADJUSTMENT

Test Points: TP3004, TP3006, TP3502
TP3503
Adjustments: R3001 (REC VIDEO LEVEL)
R3016 (REC CHROMA LEVEL)

1. Supply an NTSC Color Bar Signal W/White Window to the Video Input on the rear panel.
2. Insert a cassette tape and make a recording in the SP mode.
3. Connect the scope between TP3503 (HOT) and TP3502 (GND) on the Head Amp Section.
4. Turn the REC VIDEO LEVEL (R3001) fully clockwise from the component side.
5. Set the scope 20mV/div., 20 u-sec/div. Use TP3004 as scope trigger.
6. Adjust the REC CHROMA (R3016) on the Luminance Signal Process Section so that the level of cyan portion is 32 (+- 3) mVp-p.



A = 32 (+- 3) mVp-p

Fig. E25 TP3503 20mV/20 u-sec. div.

7. Then set the scope 20mV-div., 2msec/div.
   Use TP3006 as scope trigger.
8. Adjust the REC VIDEO LEVEL (R3001) on the Luminance Signal Process Section so that the level of V sync portion is 120 (+- 3) mVp-p.

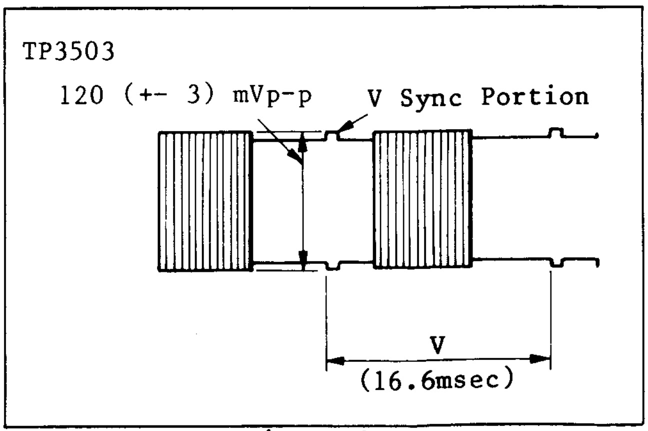


Fig. E26

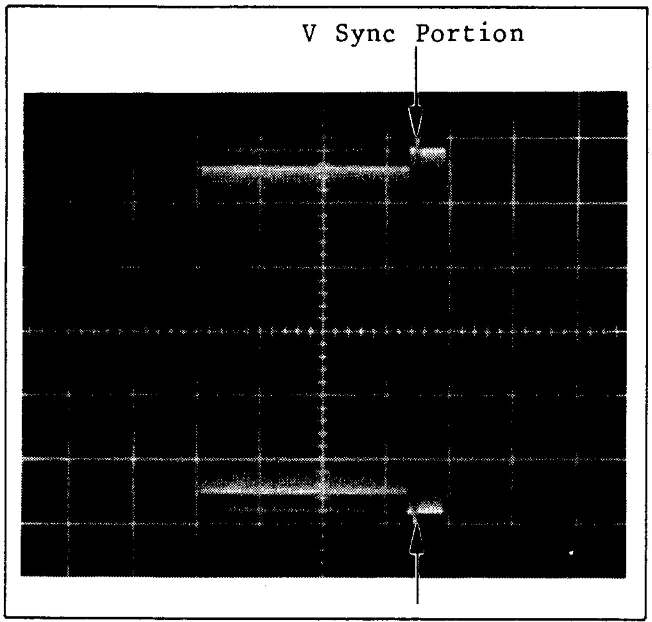


Fig. E27 TP3503 20mV/2msec. div.

2-3-5. 320FH VCO ADJUSTMENT

Test Point: TP8103
Adjustment: R8109 (320FH VCO)

1. Place the unit in STOP mode.
2. Connect the test point (TP8103) to Pin 3 of Chrominance C.B.A. through the resistor (1kΩ) and the diodes (MA165).

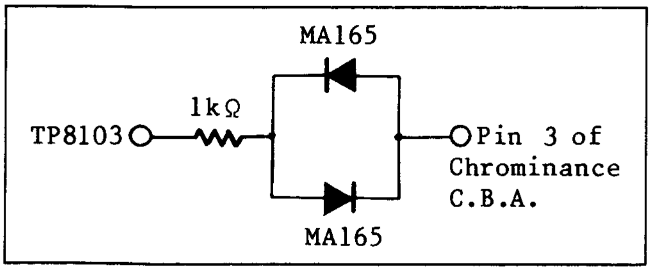


Fig. E28

3. Connect the frequency counter to TP8103 on the Chrominance C.B.A.
4. Adjust the 320FH VCO (R8109) from the component side on the Chrominance C.B.A. so that the frequency is 4.2 (+- 0.1) MHz.
5. Remove the frequency counter, resistor/diodes.

2-3-6. 3.58MHZ VXO ADJUSTMENT

Test Point: TP8104
Adjustment: C8111 (3.58MHz VXO)

1. Place the unit in STOP mode.
2. Connect the test point (TP8102) to GND on the Chrominance C.B.A. through the resistor (22kΩ) and the capacitor (0.01 u-F).

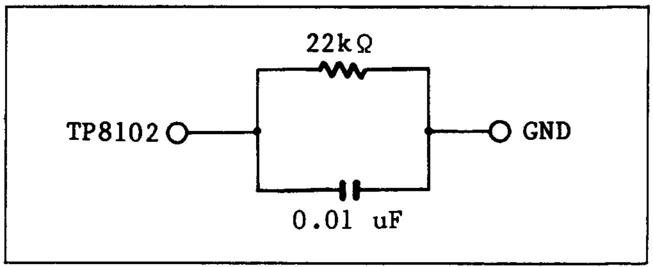


Fig. E29

3. Connect the frequency counter to TP8104 on the Chrominance C.B.A.
4. Adjust the 3.58MHz VXO (C8111) from the component side on the Chrominance C.B.A. so that the frequency is 3.579545 MHz (+- 20) Hz
5. Remove the frequency counter, resistor/capacitor.

2-3-7. COMB FILTER ADJUSTMENT

Test point: TP3004
Adjustment: R8113 (COMB FILTER)

1. Supply a color bar signal to the Video Input on the rear panel.
2. Insert a cassette tape and make a recording in the SLP mode.
3. Connect the scope to TP3004 on the Luminance Signal Process Section.
4. Playback the portion just recorded.
5. Turn the Tracking Control on the front panel for the poorest tracking. (Worst playback image.)
6. During playback, adjust the COMB FILTER (R8113) on the Chrominance C.B.A. from the component side as shown below.

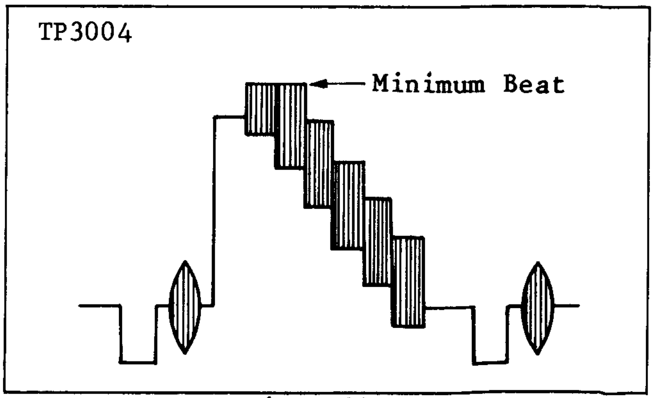


Fig. E30

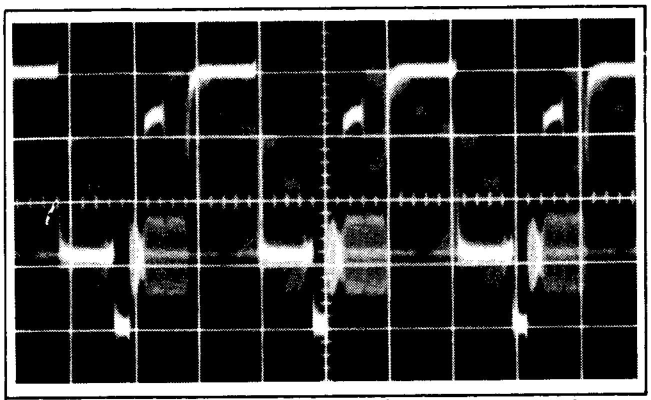


Fig. E31 TP3004 0.5V/20 u-sec. div.

2-3-8. PLAYBACK LEVEL ADJUSTMENT

Test Point: TP3004
Adjustment: R3123 (PB VIDEO LEVEL)

1. Supply an NTSC Color Bar Signal W/White Window (1Vp-p) to the Video Input on the rear panel.
2. Insert a cassette and make a recording in the SP mode for a few minutes
3. Connect the scope to TP3004 on the Luminance Signal Process Section.
4. Playback the portion just recorded.
5. During playback, adjust the PB VIDEO LEVEL (R3123) on the Luminance C.B.A. so that the video level is 2.0 (+- 0.1) Vp-p.
6. Confirm that the level of cyan portion is 1.36 (+- 0.2) Vp-p.

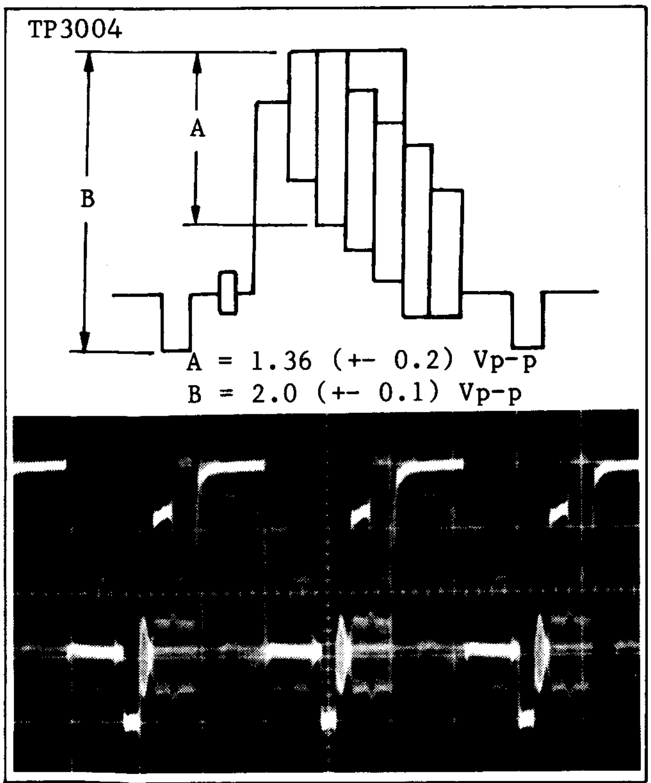
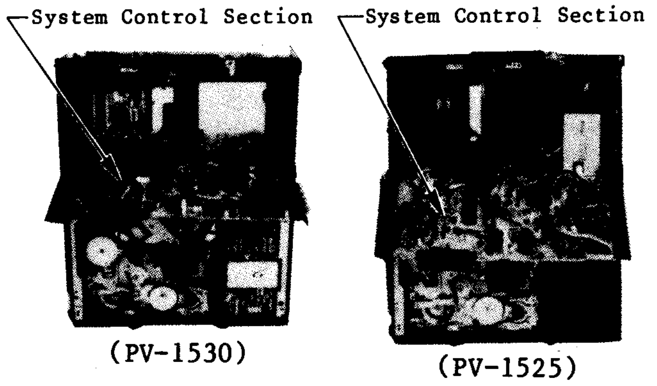
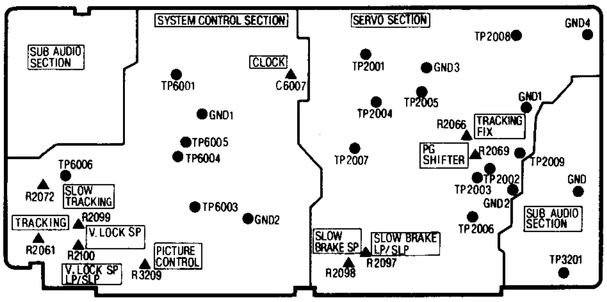

TP3004
A
B
A = 1.36 (+- 0.2) Vp-p
B = 2.0 (+- 0.1) Vp-p

Fig. E32 TP3004 0.5V/20 u-sec. div.

2-4. SYSTEM CONTROL SECTION

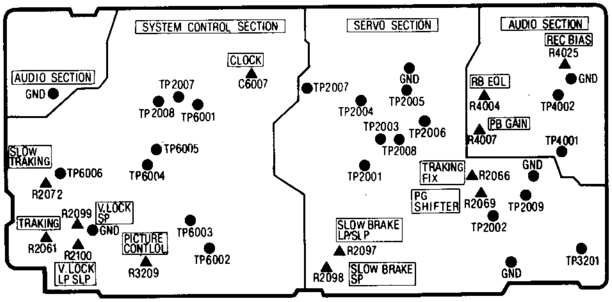

System Control Section
System Control Section
(PV-1530)
(PV-1525)

Location of Test Points & Adjustment Points (PV-1530)


SYSTEM CONTROL SECTION
SERVO SECTION
SUB AUDIO SECTION
CLOCK
C6007
TP6001
GND1
TP6005
TP6004
TP6006
R2072
SLOW TRACKING
TP6003
GND2
TRACKING
R2099
V. LOCK SP
R2061
R2100
V. LOCK SP LP/SLP
R3209
PICTURE CONTROL
TP2008
GND4
TP2001
GND3
TP2005
TP2004
GND1
R2066
TRACKING FIX
TP2007
PG SHIFTER
R2069
TP2009
TP2002
TP2003
GND
GND2
SUB AUDIO SECTION
TP2006
SLOW BRAKE SP
SLOW BRAKE LP/SLP
R2097
R2098
TP3201

Servo /Sub Audio /System Control C.B.A. (Component Side)

Location of Test Points & Adjustment Points (PV-1525)


SYSTEM CONTROL SECTION
SERVO SECTION
AUDIO SECTION
REC BIAS
R4025
CLOCK
C6007
AUDIO SECTION
GND
TP2007
TP2008
TP6001
SLOW TRAKING
TP6005
TP6006
TP6004
R2072
R2099
V.LOCK SP
TRAKING
GND
R2061
R2100
PICTURE CONTLOL
TP6003
V.LOCK LP SLP
R3209
TP6002
TP2007
GND
TP2004
TP2005
TP2003
TP2006
TP2008
TP2001
RB EQL
R4004
PB GAIN
R4007
GND
TP4002
TP4001
TRAKING FIX
R2066
GND
PG SHIFTER
R2069
TP2009
TP2002
SLOW BRAKE LP/SLP
R2097
R2098
SLOW BRAKE SP
GND
TP3201

Servo /Audio /System Control C.B.A. (Component Side)

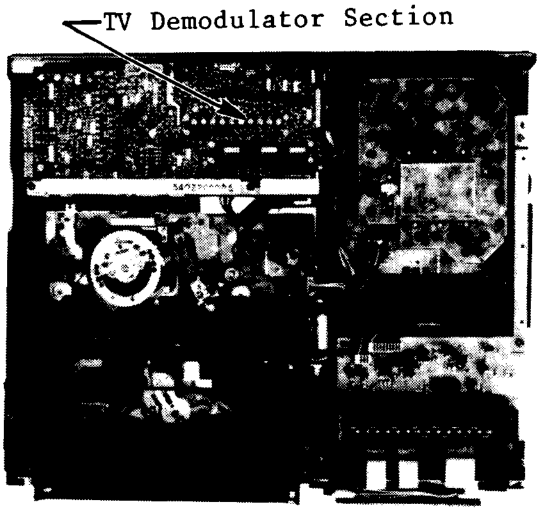
Fig. E33

2-4-1. CLOCK ADJUSTMENT

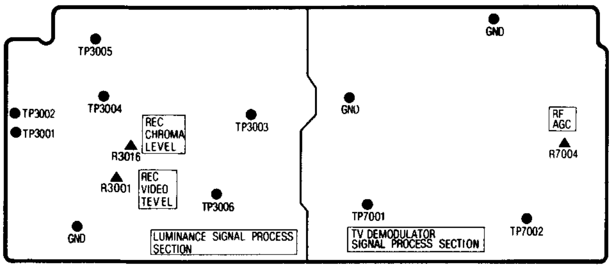
Test Point: TP6001
Adjustment: C6007 (CLOCK)

1. Connect the frequency counter with 10:1 Probe to TP6001 on the System Control Section.
2. Adjust the CLOCK (C6007) from the component side so that the frequency at TP6001 is 349.525 (+- 0.001) KHz.
3. Remove the frequency counter.

2-5. TV DEMODULATOR SECTION

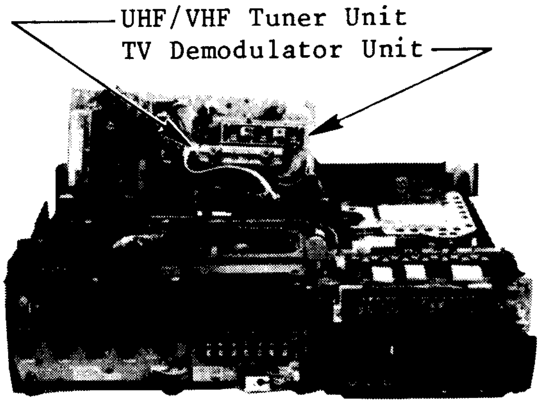

TV Demodulator Section

Location of Test Points & Adjustment Points


GND
TP3005
TP3004
TP3002
TP3001
REC CHROMA LEVEL
R3016
TP3003
R3001
REC VIDEO TEVEL
TP3006
GND
LUMINANCE SIGNAL PROCESS SECTION
GND
RF AGC
R7004
TP7001
TV DEMODULATOR SIGNAL PROCESS SECTION
TP7002

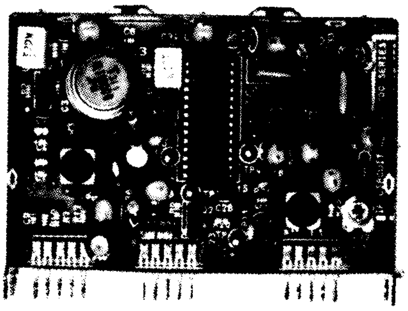
Signal Process C.B.A. (Component Side)

Fig. E34

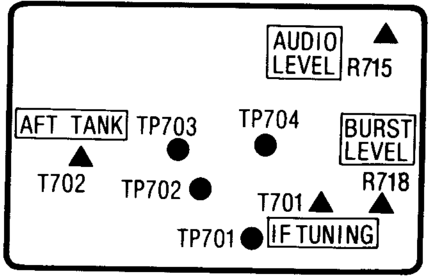

UHF/VHF Tuner Unit
TV Demodulator Unit

(Component Side)

TV Demodulator Unit



Location of Test Points & Adjustment Points


AUDIO LEVEL
R715
AFT TANK
TP703
TP704
BURST LEVEL
T702
TP702
T701
R718
TP701
IF TUNING

(Component Side)

UHF/VHF Tuner Unit

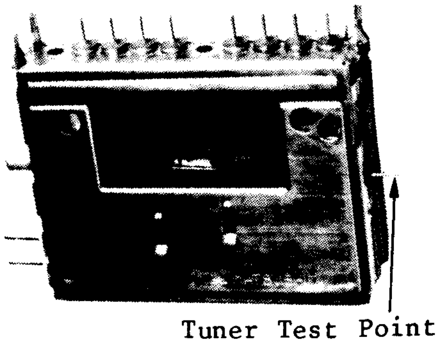

Tuner Test Point

Fig. E35

2-5-1. VIF OVERALL CONFIRMATION AND VCO ADJUSTMENT

Test Points: TP703, TP704
Adjustment : T701 (VCO)

(CAUTION)
Since the TV Demodulator Unit and UHF/VHF Tuner Unit have already been factory adjusted, do not try to adjust unless absolutely necessary.

A: Factory Adjustment

A-1. VIF Overall Confirmation

1. Connect the VIF Sweep Generator/Trap Adjuster and Monitor Scope as shown below.

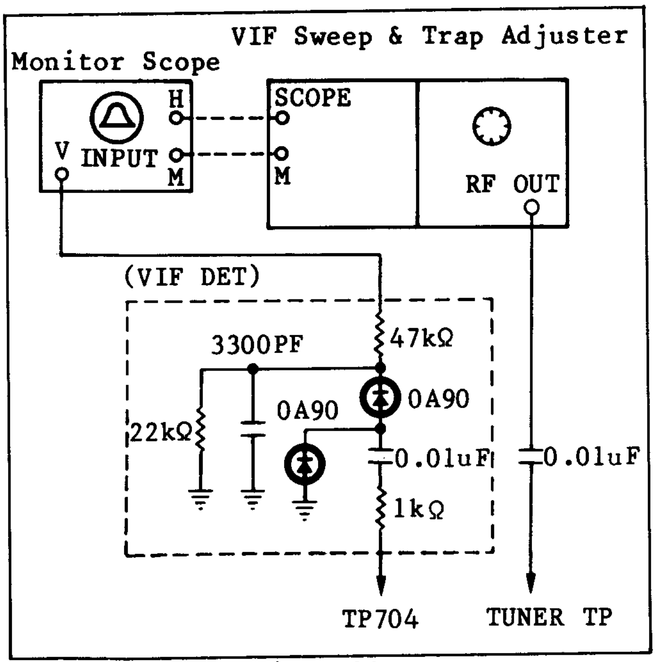

VIF Sweep & Trap Adjuster
Monitor Scope
H
V INPUT
M
SCOPE
M
RF OUT
(VIF DET)
3300PF
47kΩ
0A90
0A90
22kΩ
0.01uF
0.01uF
1kΩ
TP704
TUNER TP

Fig. E36

2. Connect the output of the VIF Sweep Generator to tuner test point on the UHF/VHF Tuner Unit.
3. Connect the V Input of the Monitor Scope to TP704 on the TV Demodulator Unit through VIF Detector.
4. Select Channel 13.
5. Set the AFT switch to "OFF" position.
6. Connect the DC Power Supply Unit to TP701 on the TV Demodulator Unit and Set at 0V DC as a starting point.
7. Connect TP702 and GND with a 3.3 u-F/25V capacitor.
8. Adjust the VCO (T701) so that the beat portion is at center as shown in Fig. E37.

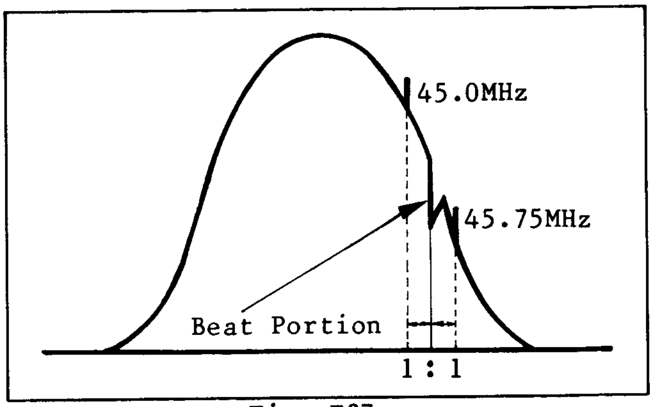

45.0MHz
45.75MHz
Beat Portion
1 : 1

Fig. E37

9. Set the voltage on DC Power Supply the TP701 so that the waveform level is maximum.
10. Adjust the output of the VIF Sweep Generator so that the A level is 1.0Vp-p.

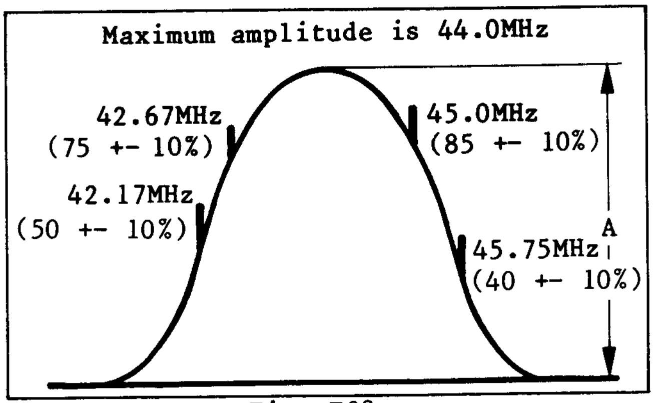

Maximum amplitude is 44.0MHz
42.67MHz
(75 +- 10%)
42.17MHz
(50 +- 10%)
45.0MHz
(85 +- 10%)
A
45.75MHz
(40 +- 10%)

Fig. E38

11. Increase the VIF Sweep Generator output by 25dB.
12. Adjust the output of the DC Power Supply Unit so that the A portion becomes 1.0Vp-p.
13. Confirm that the Sweep output waveform is as shown in Fig. E38.
14. Adjust the VCO (T701) so that the Beat portion is at 45.75MHz marker as shown below.

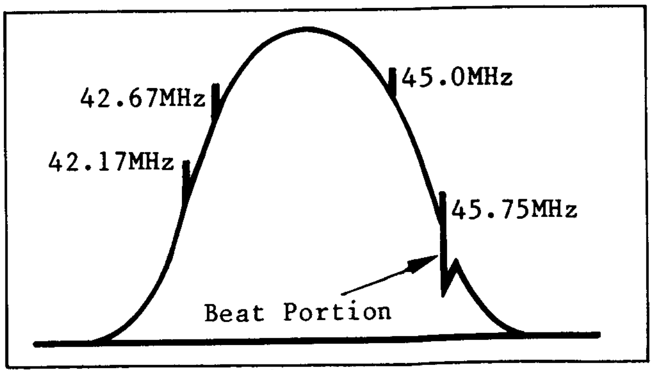

42.67MHz
42.17MHz
45.0MHz
45.75MHz
Beat Portion

Fig. E39

15. Remove the capacitor.

A-2. VCO Adjustment

1. Adjust DC Power Supply Unit to 0V DC.
2. Connect a 3.3 U-F/25V capacitor between TP702 and GND.
3. Connect the Frequency Counter to TP703 on the TV Demodulator Unit through a Tuning Amp.

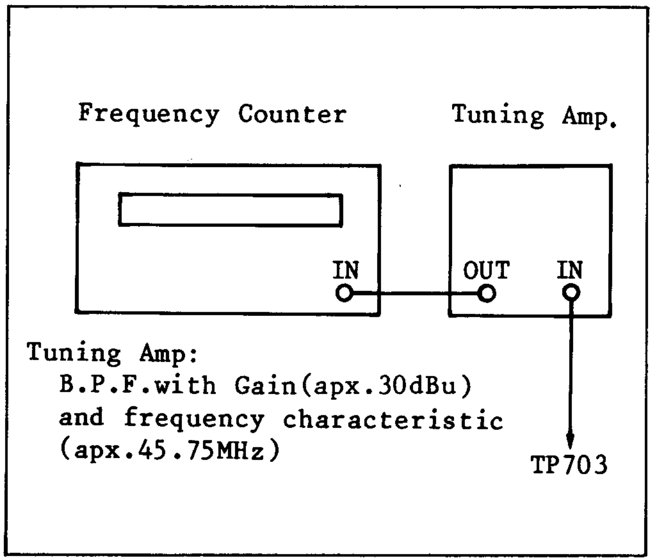

Frequency Counter
Tuning Amp.
IN
OUT
IN
Tuning Amp:
B.P.F.with Gain(apx.30dBu)
and frequency characteristic
(apx.45.75MHz)
TP703

Fig. E40

4. Adjust the VCO (T701) so that the frequency is 45.75MHz (+- 0.02) MHz.
5. Remove the capacitor.

B: Field Adjustment

1. Supply the NTSC standard color bar signal to the RF Input on the rear panel and tune this signal.
2. Connect the scope to TP704 on the TV Demodulator Unit.
3. Adjust the VCO (T701) so that the waveform is as shown below.

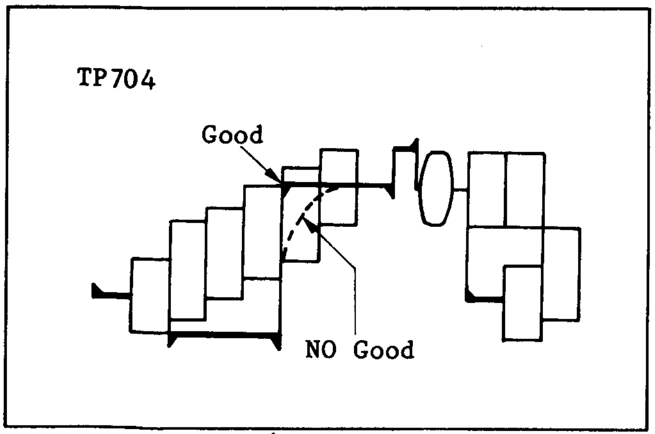

TP704
Good
NO Good

Fig. E41

2-5-2. AFT TANK ADJUSTMENT

Test Point: Tuner Test Point (TP)
Adjustment: T702 (AFT)

1. Tune in a local TV program on Channel 4.
2. Connect the frequency counter to tuner test point on the UHF/VHF Tuner Unit through a 10kΩ resistor and a 10PF capacitor.

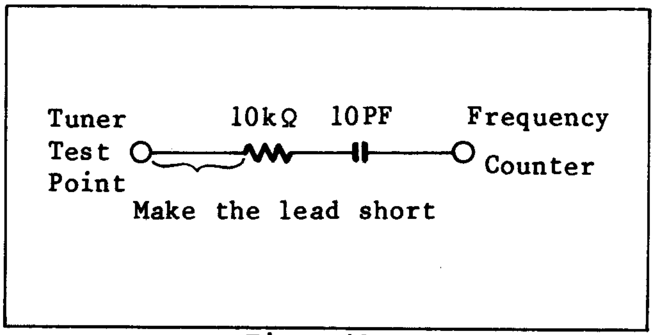

Tuner Test Point
10kΩ
10PF
Frequency Counter
Make the lead short

Fig. E42

3. Set the AFT switch on the Tuning Control Unit to "OFF".
4. Adjust the tuning VR on the front panel so that the frequency is 113.00 (+- 0.01) MHz.
5. Set the AFT switch on the Tuning Control Unit to "ON".
6. Adjust the AFT (T702) so that the frequency is 113.00 (+- 0.005) MHz.
7. Remove the frequency counter.

2-5-3. BURST LEVEL ADJUSTMENT

Test Point: Pin 10 of TV Demodulator Unit
Adjustment: R718 (BURST LEVEL)

1. Supply the NTSC standard color bar signal to the RF Input on the rear panel and tune to this signal.
2. Connect the scope to Pin 10 of TV Demodulator Unit.
3. Confirm that the video level at Pin 10 of TV Demodulator Unit is 1.0 (+- 0.2) Vp-p.
4. Adjust the BURST LEVEL (R718) so that the burst level is 22 (+- 1) % of the video level.
5. Confirm that the sync level is more than 24% of video level.

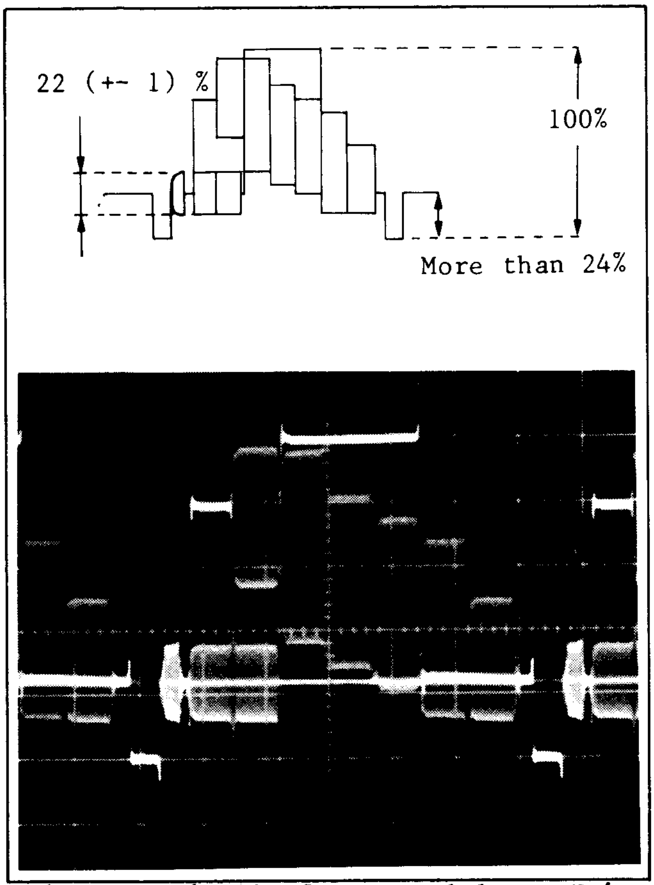


Fig. E43 Pin 10 of TV Demodulator Unit 0.2V/10 u-sec.div.

2-5-4. AUDIO LEVEL ADJUSTMENT

Test Point: Pin 15 of the TV Demodulator Unit
Adjustment: R715 (AUDIO LEVEL)

1. Supply TV RF signal with audio modulation of 400Hz at 30% to the RF Input on the rear panel.
2. Connect the scope between Pin 15 of the TV Demodulator Unit and GND.
3. Set the AFT switch on the Tuning Control Unit to "ON".
4. Adjust the AUDIO LEVEL (R715) so that the level is 140 (+- 10)mVp-p.

2-5-5. RF AGC ADJUSTMENT

Test Point: TP7001
Adjustment: R7004 (RF AGC)

A: Factory Adjustment

1. Tune in a color bar signal (VHF).
2. Set the AFT switch on the Tining Control Unit to "ON".
3. Set the input level of electric field to 63 (+- 1) dBu. (Using the Attenuator and Spectrum Analyzer)
4. Connect the scope to TP7001 on the Demodulator Signal Process Section.
5. Turn the RF AGC (R7004) on the Demodulator Signal Process Section fully counterclockwise from foil side.
6. Then slowly turn the RF AGC (R7004) till just before the voltage drops.
7. Change the input electric field from 63 dBu to 66 dBu.
8. Confirm that the voltage at TP7001 has dropped more than 1.0V.

B: Field Adjustment

1. Supply a local TV Signal to the RF Input the rear panel and tune to this signal.
2. Set the AFT switch on the Tuning Control Unit to "ON".
3. Connect the scope to pin 10 of TV Demodulator Unit and GND.
4. Adjust the RF AGC (R7004) so that the H-sync is Maximum and it's shape can be observed clearly.

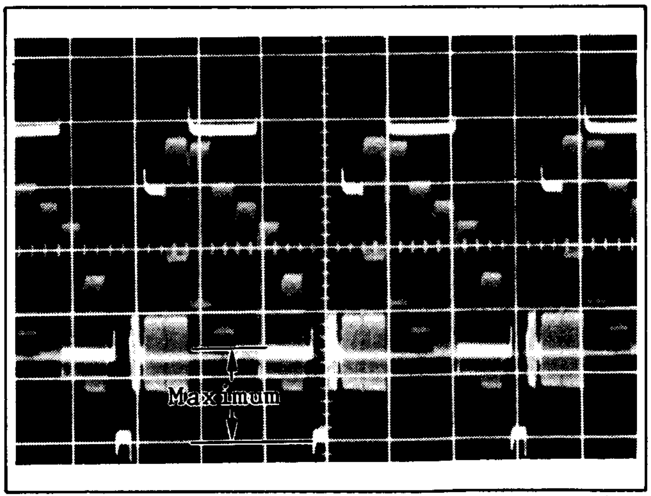


Fig. E44 Pin 10 of TV Demodulator Unit 0.2V/20 u-sec. div.

5. Confirm that the noise band and beat does not appear on the TV screen.

Note:
This procedure is just a simplified method. So use the factory Adjustment for a more accurate or interchangeable adjustment.

2-6. IR WIRELESS RECEIVING DETECTOR SECTION

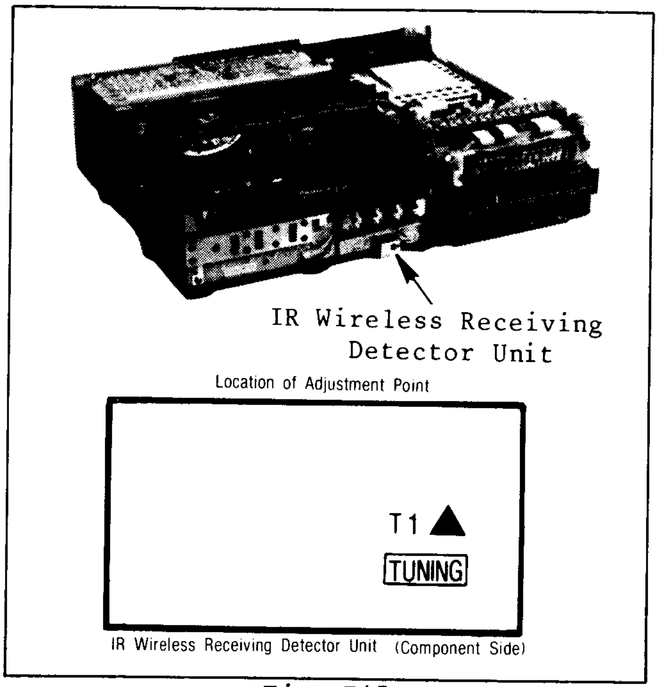

IR Wireless Receiving Detector Unit
Location of Adjustment Point
T1 ▲
TUNING
IR Wireless Receiving Detector Unit (Component Side)

Fig. E45

2-6-1. TUNING ADJUSTMENT

Test Point : Pin 3 of P6004
Adjustment : T1 (TUNING)

1. First, place the deck so that the left side faces down. Hold the deck with your hand and then remove 2 red screws (A) and 2 screws (B), and remove the Front Frame Support Angle from the unit.

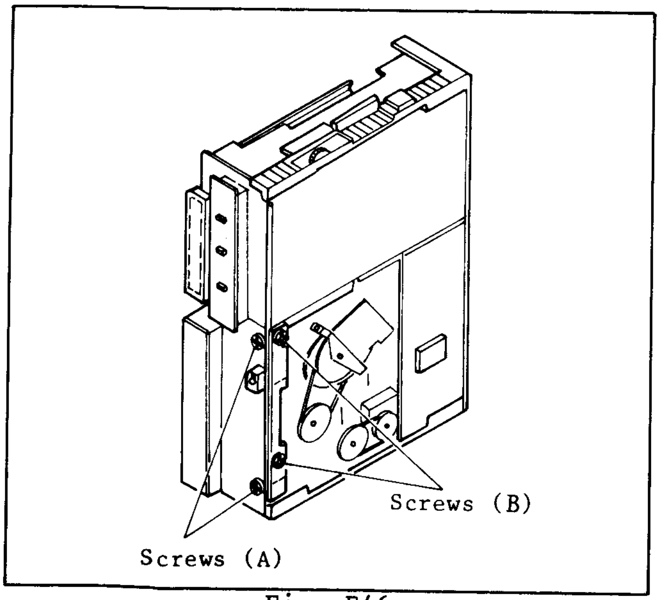

Screws (B)
Screws (A)

Fig. E46

2. Place the deck in the normal operating position. And then take out the IR Wireless Receiving Detector Unit from the Unit.
3. Place the IR Wireless Transmitter Unit and the Unit as shown in Fig. E47.

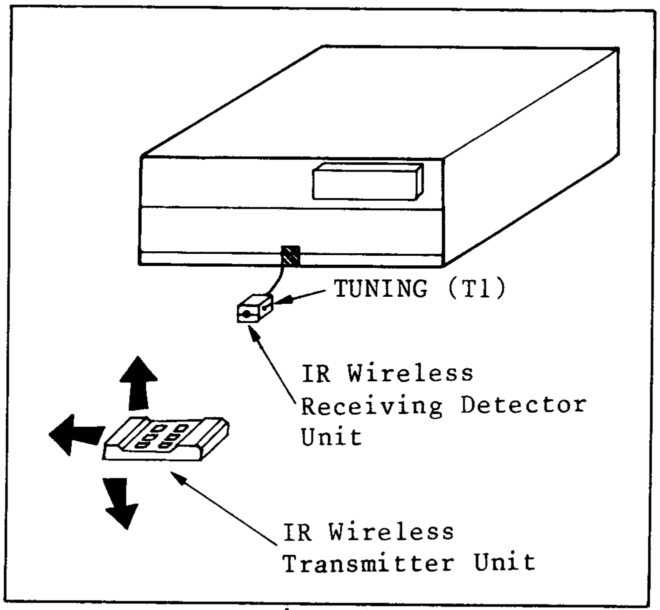

TUNING (T1)
IR Wireless Receiving Detector Unit
IR Wireless Transmitter Unit

Fig. E47

4. Place the Unit in the stop mode.
5. Connect the scope to P3 of P6004 on the System Control Section.
6. Change the direction of the IR Wireless Transmitter Unit gradually with pushing the stop button on the IR Wireless Transmitter Unit until the waveform on the scope is just begins to be disturbed as shown below.

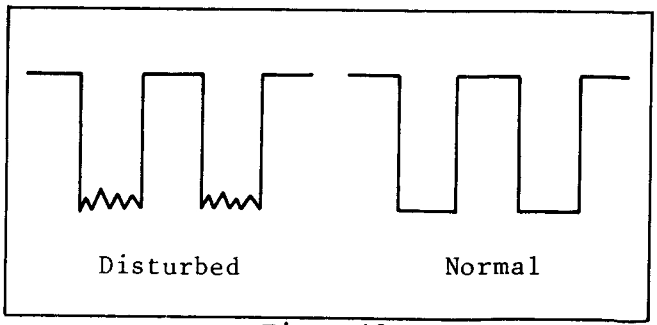
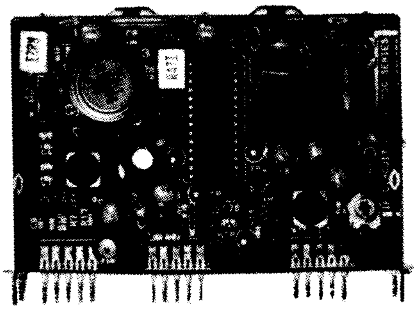

Disturbed
Normal

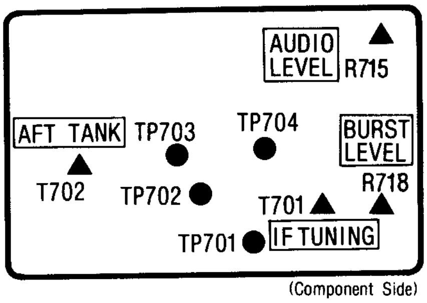
Fig. E48

7. Adjust the TUNING (T1) on the IR Wireless Receiving Detector Unit continuing the condition of item 6 so that the waveform at Pin 3 of P6004 is best (i.e. least disturbance possible).
8. Return the IR Wireless Receiving Detector Unit to the Unit.
9. Remove the scope.

TV Demodulator Unit

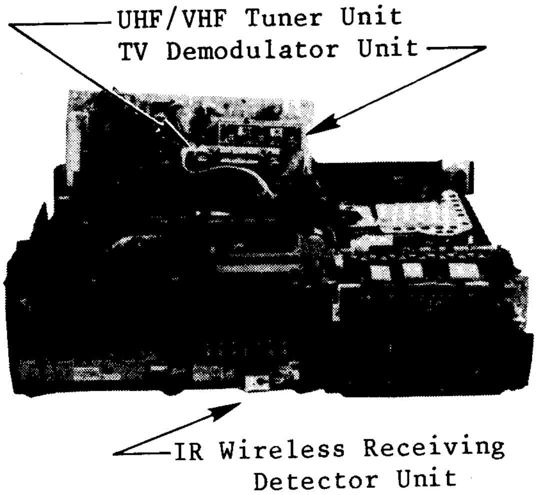
VEQS0257

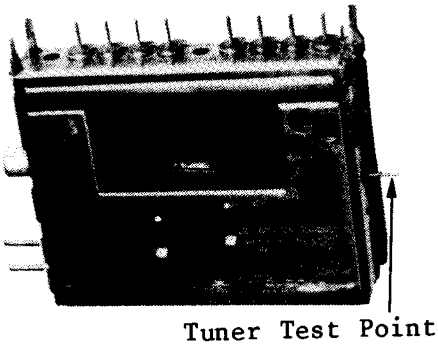


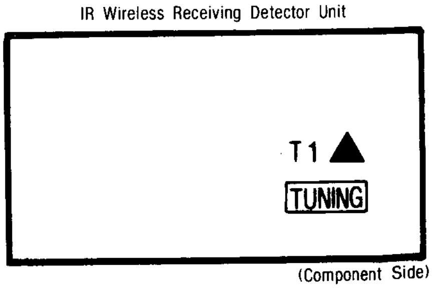

AUDIO LEVEL
R715
AFT TANK
TP703
TP704
BURST LEVEL
T702
TP702
T701
R718
TP701
IF TUNING
(Component Side)

UHF /VHF Tuner Unit **TNV56751F2R**

IR Wireless Receiving Detector Unit VEQS0285 /VEQS0293 (PV-1530)

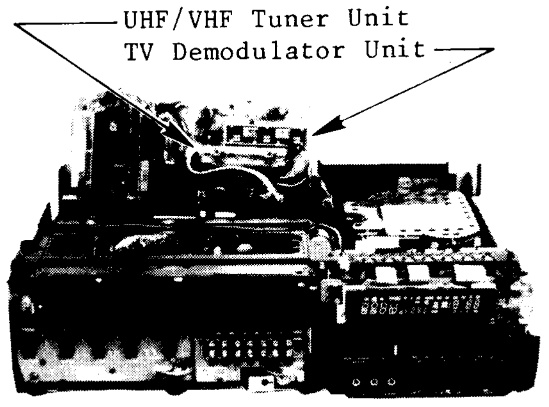

UHF/VHF Tuner Unit
TV Demodulator Unit
IR Wireless Receiving Detector Unit


Tuner Test Point

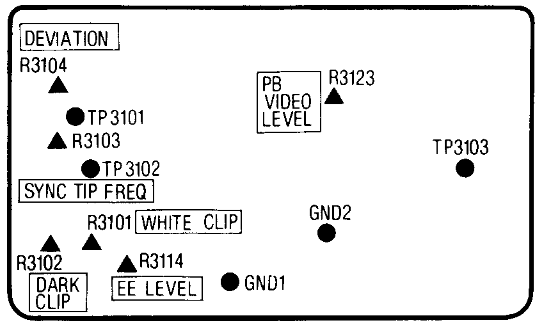

IR Wireless Receiving Detector Unit
T1
TUNING
(Component Side)

Location of Test Points and Adjustment Points

Luminance C.B.A.	**VEPS0337A**
Chrominance C.B.A.	**VEPS0806A**
Head Amp Unit	**VEPS0508A1**

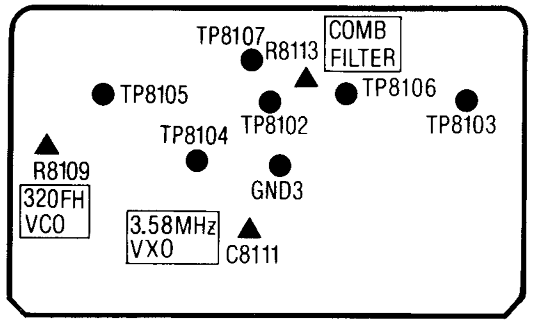

UHF/VHF Tuner Unit
TV Demodulator Unit

Luminance C.B.A.


DEVIATION
R3104
TP3101
R3103
TP3102
SYNC TIP FREQ
PB VIDEO LEVEL
R3123
TP3103
R3101
WHITE CLIP
GND2
R3102
DARK CLIP
R3114
EE LEVEL
GND1

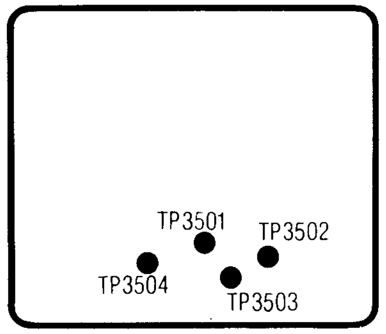
(Component Side)

Chrominance C.B.A.


TP8107
R8113
COMB FILTER
TP8105
TP8106
TP8102
TP8103
TP8104
R8109
320FH VCO
GND3
3.58MHz VXO
C8111

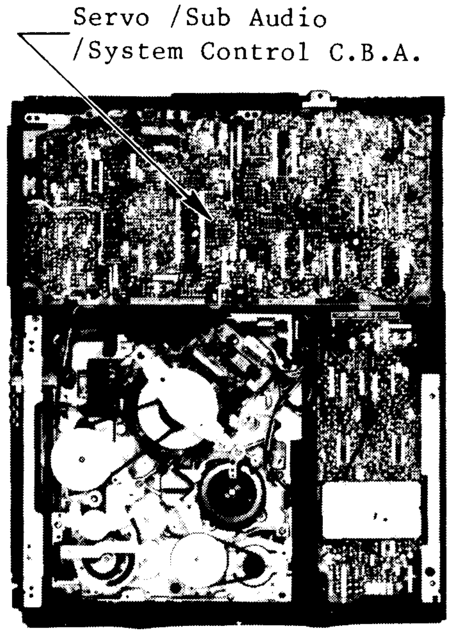
(Component Side)

Head Amp C.B.A.

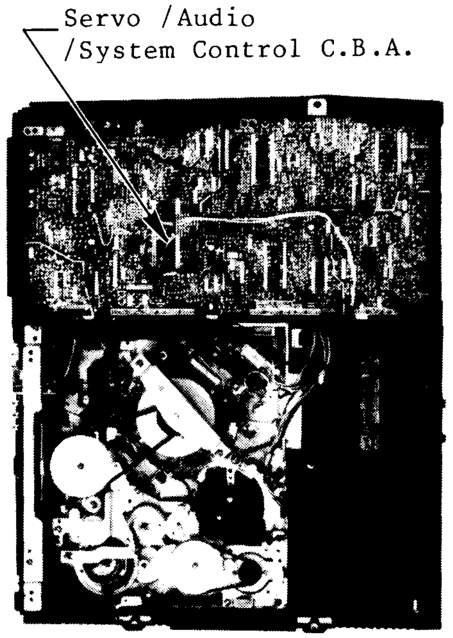

TP3501
TP3502
TP3504
TP3503

(Component Side)

Servo /Sub Audio /System Control C.B.A.	**VEPS0249B1**	**(PV-1530)**
Servo /Audio /System Control C.B.A.	**VEPS0250H1**	**(PV-1525)**

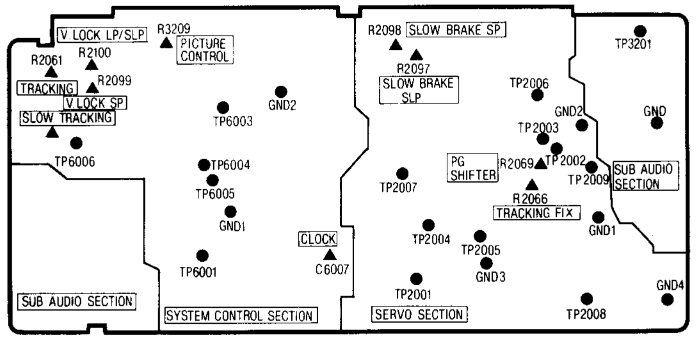

Servo /Sub Audio /System Control C.B.A.

(PV-1530)


Servo /Audio /System Control C.B.A.

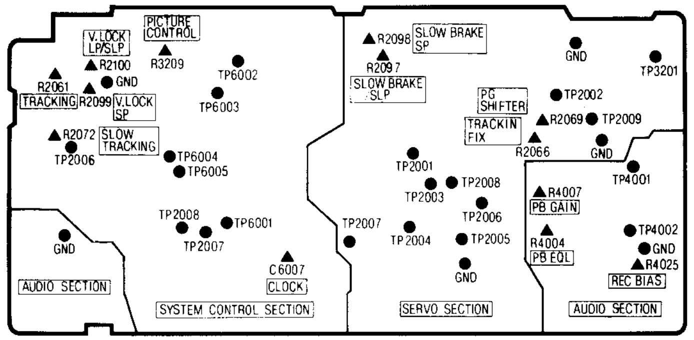
(PV-1525)

Servo /Sub Audio /System Control C.B.A.


V.LOCK LP/SLP
R3209
PICTURE CONTROL
R2061
R2100
TRACKING
R2099
V.LOCK SP
SLOW TRACKING
TP6006
TP6003
GND2
TP6004
TP6005
GND1
TP6001
CLOCK
C6007
SUB AUDIO SECTION
SYSTEM CONTROL SECTION
R2098
SLOW BRAKE SP
R2097
SLOW BRAKE SLP
TP2006
GND2
TP2003
PG SHIFTER
R2069
TP2002
TP2009
TP2007
R2066
TRACKING FIX
TP2004
TP2005
GND3
TP2001
SERVO SECTION
TP3201
GND
SUB AUDIO SECTION
GND1
GND4
TP2008

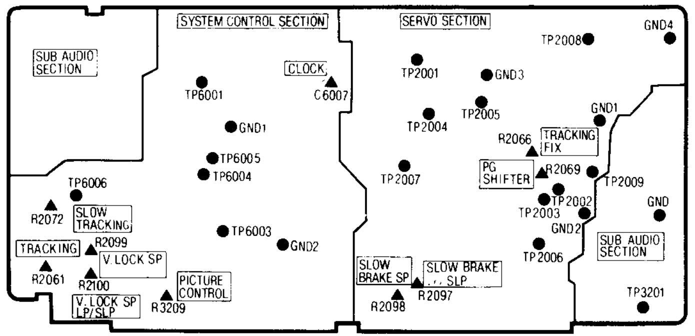
(Foil Side)

Servo /Sub Audio /System Control C.B.A.


PICTURE CONTROL
V.LOCK LP/SLP
R2100
R3209
TP6002
R2061
GND
TRACKING
R2099
V.LOCK SP
TP6003
R2072
SLOW TRACKING
TP2006
TP6004
TP6005
GND
TP2008
TP6001
TP2007
C6007
CLOCK
AUDIO SECTION
SYSTEM CONTROL SECTION
R2098
SLOW BRAKE SP
R2097
SLOW BRAKE SLP
PG SHIFTER
TRACKIN FIX
TP2002
R2069
TP2009
R2066
GND
TP2001
TP2003
TP2008
TP2006
TP2007
TP2004
TP2005
GND
SERVO SECTION
GND
TP3201
TP4001
R4007
PB GAIN
R4004
PB EQL
TP4002
GND
R4025
REC BIAS
AUDIO SECTION

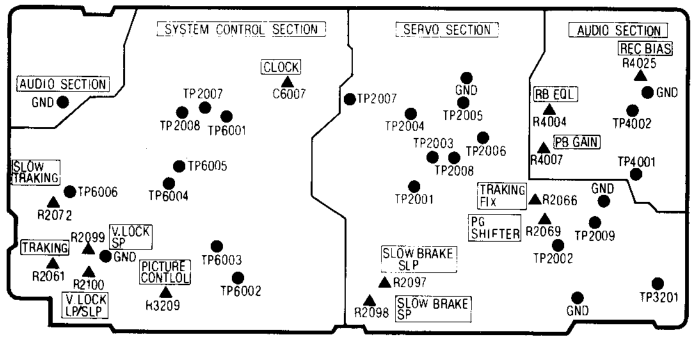
(Foil Side)

Servo /Sub Audio /System Control C.B.A.


SUB AUDIO SECTION
SYSTEM CONTROL SECTION
CLOCK
TP6001
C6007
GND1
TP6005
TP6004
TP6006
R2072
SLOW TRACKING
TP6003
GND2
TRACKING
R2099
V.LOCK SP
R2061
R2100
PICTURE CONTROL
V.LOCK SP LP/SLP
R3209
SERVO SECTION
TP2008
GND4
TP2001
GND3
TP2005
TP2004
GND1
R2066
TRACKING FIX
TP2007
PG SHIFTER
R2069
TP2009
TP2002
TP2003
GND2
GND
SUB AUDIO SECTION
TP2006
SLOW BRAKE SP
SLOW BRAKE SLP
R2098
R2097
TP3201

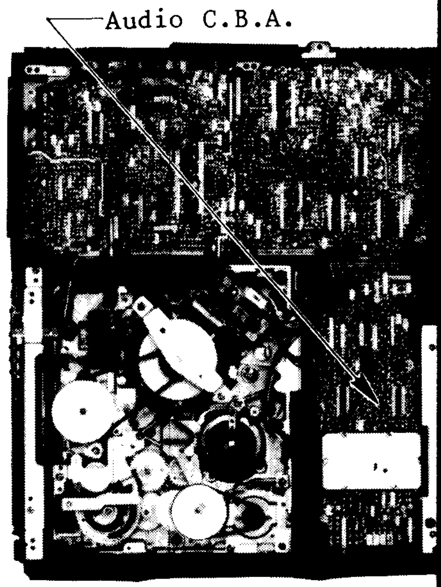
(Component Side)

Servo /Sub Audio /System Control C.B.A.

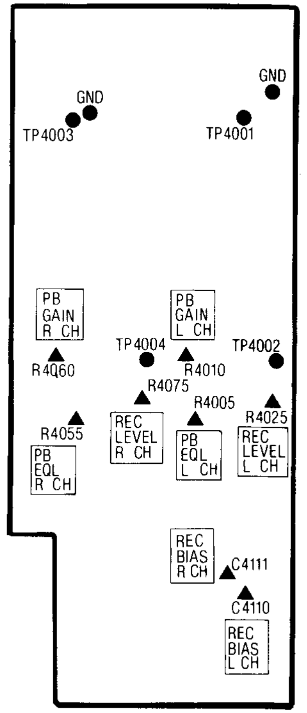

SYSTEM CONTROL SECTION
CLOCK
C6007
AUDIO SECTION
GND
TP2007
TP2008
TP6001
TP6005
SLOW TRAKING
TP6006
TP6004
R2072
TRAKING
R2099
V.LOCK SP
GND
R2061
R2100
PICTURE CONTLOL
V.LOCK LP/SLP
R3209
TP6003
TP6002
SERVO SECTION
TP2007
GND
TP2005
TP2004
TP2003
TP2006
TP2008
TP2001
TRAKING FIX
R2066
PG SHIFTER
R2069
TP2002
TP2009
SLOW BRAKE SLP
R2097
R2098
SLOW BRAKE SP
GND
AUDIO SECTION
REC BIAS
R4025
GND
RB EQL
R4004
TP4002
PB GAIN
R4007
TP4001
GND
TP3201

(Component Side)

Audio C.B.A.	**VEPS0422A1**

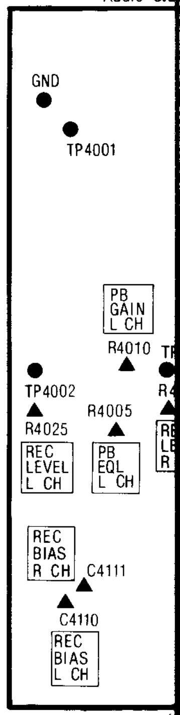


Audio C.B.A.

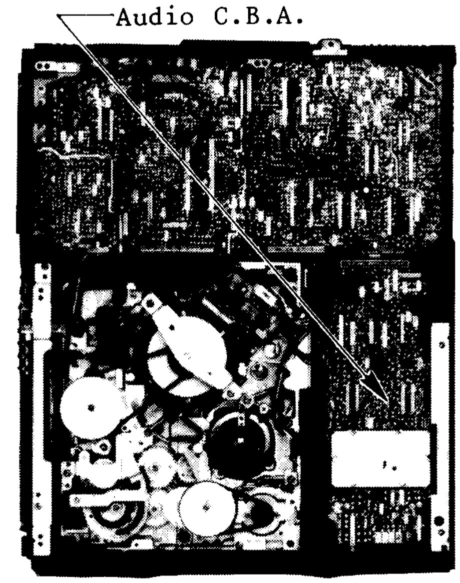

GND
TP4003
GND
TP4001
PB GAIN R CH
PB GAIN L CH
TP4004
TP4002
R4Q60
R4010
R4075
R4005
R4055
R4025
PB EQL R CH
REC LEVEL R CH
PB EQL L CH
REC LEVEL L CH
REC BIAS R CH
C4111
C4110
REC BIAS L CH

(Foil Side)

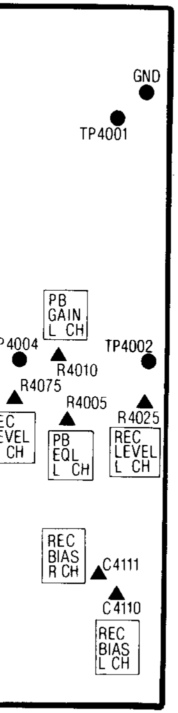
Audio C.B


GND
TP4001
PB GAIN L CH
R4010
TP4002
R4005
R4025
REC LEVEL L CH
PB EQL L CH
REC BIAS R CH
C4111
C4110
REC BIAS L CH

.B.A. VEPS0422A1 (PV-1530)

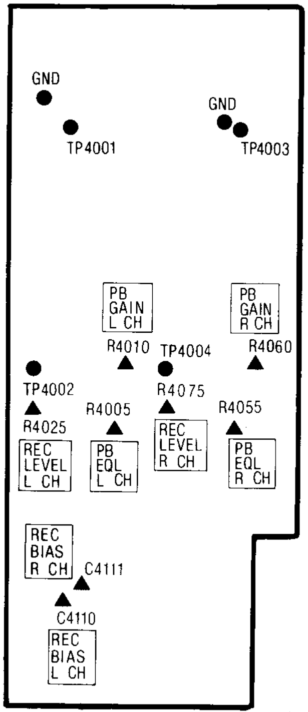


io C.B.A.


GND
TP4001
PB GAIN L CH
P4004
R4010
TP4002
R4075
R4005
R4025
EC EVEL CH
PB EQL L CH
REC LEVEL L CH
REC BIAS R CH
C4111
C4110
REC BIAS L CH

(Foil Side)

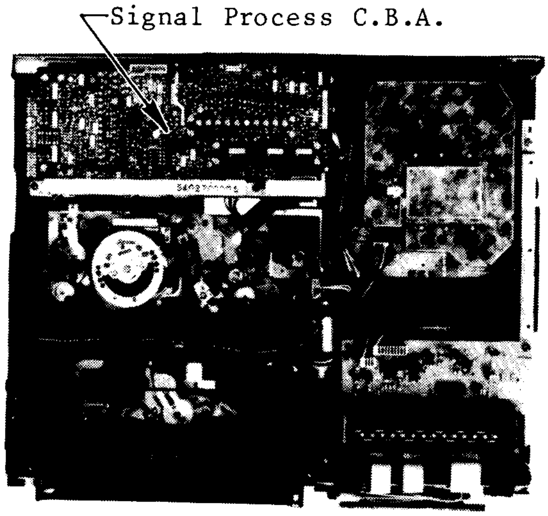
Audio C.B.A.


GND
TP4001
GND
TP4003
PB GAIN L CH
PB GAIN R CH
R4010
TP4004
R4060
TP4002
R4075
R4005
R4055
R4025
REC LEVEL L CH
PB EQL L CH
REC LEVEL R CH
PB EQL R CH
REC BIAS R CH
C4111
C4110
REC BIAS L CH

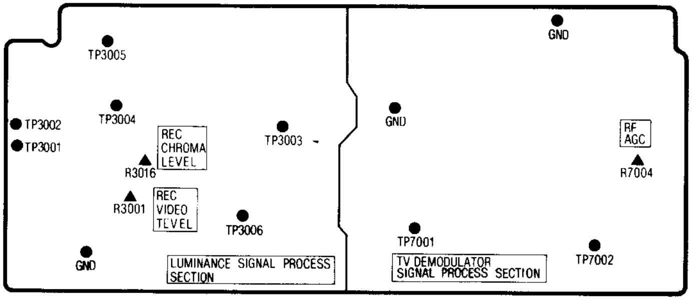
(Component Side)

Signal Process C.B.A. VEPS0344B1 (PV-1530)

VEPS0344B2 (PV-1525)


Signal Process C.B.A.

Signal Process C.B.A.


TP3005
GND
TP3002
TP3001
TP3004
REC CHROMA LEVEL
TP3003
GND
RF AGC
R3016
R7004
R3001
REC VIDEO LEVEL
TP3006
TP7001
TP7002
GND
LUMINANCE SIGNAL PROCESS SECTION
TV DEMODULATOR SIGNAL PROCESS SECTION

(Component Side)

ORDER NO. VRD-8404-569
B3

Service Manual

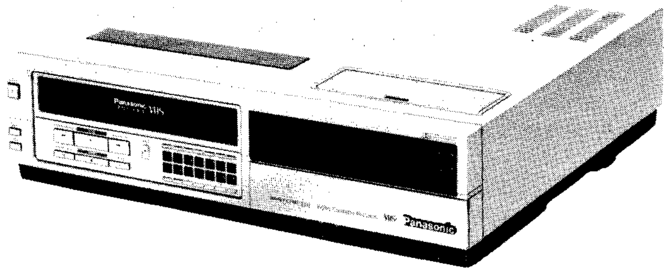
Video Cassette Recorder

Vol. 3

Block Diagrams

Panasonic
Omnivision
VHS

PV-1530
PV-1525



SPECIFICATIONS

Power Source:	120V AC ±10%, 60Hz ±0.5%
'ower Consumption:	Approx. 22 watts
Television System:	EIA Standard (525 lines, 60 fields) NTSC color signal
Video Recording System:	4 rotary heads, helical scanning system Luminance: FM azimuth recording Color signal: Converted subcarrier phase shift recording
Audio Track:	2 track (PV-1525: 1 track)
Tape Format:	Tape width 1/2″ (12.7mm), high density tape
Tape Speed:	SP mode: 1-5/16 i.p.s. (33.35mm/s) LP mode: 21/32 i.p.s. (16.67mm/s) SLP mode: 7/16 i.p.s. (11.12mm/s)
Record/Playback Time:	8 HRS. with 160 min. type tape used in SLP mode
FF/REW Time:	Less than 6 min. with 120 min. type tape
Heads:	Video: 4 rotary heads Audio/Control: 2 stationary head (PV-1525: 1 stationary head) Erase: 1 full track erase 1 audio track erase
Input Level:	Video: VIDEO IN Jack (RCA type) 1.0Vp-p, 75Ω unbalanced Audio: AUDIO IN Jack (RCA type) (Right, Left) −20dB, 50kΩ unbalanced MIC IN jack (M6) (Right, Left) −70dB, 4kΩ unbalanced PV-1525: MIC IN jack (M3) −70dB, 4kΩ unbalanced
TV Tuners:	VHF Input: VHF Ch2-Ch13, cable channels "A"~"W", "A-2", "A-1" 75Ω unbalanced UHF Input: Ch14-Ch83, 300Ω balanced
Output Level:	Video: VIDEO OUT Jack (RCA type) 1.0Vp-p, 75Ω unbalanced Audio: AUDIO OUT Jack (RCA type) (Right, Left) −9dB, 1kΩ unbalanced PV-1525: −6dB, 600Ω unbalanced
RF Modulated:	Ch3/Ch4 switchable, 72dBμ, (Open Voltage) 75Ω unbalanced
Video Horizontal Resolution:	Color: more than 230 lines B/W: more than 230 lines
Audio Frequency Response: (10dB down)	SP mode: 100Hz~8kHz LP mode: 100Hz~6kHz SLP mode: 150Hz~5kHz
Signal-to-Noise Ratio:	Video: SP mode: better than 41dB LP mode: better than 41dB SLP mode: better than 41dB (Rohde & Schwarz noise meter) Audio: SP mode: better than 42dB LP mode: better than 40dB SLP mode: better than 40dB
Operation Temperature:	41°F—104°F (5°C—40°C)
Operating Humidity:	10%—75%
Weight:	16.8 lbs. (7.6kg) PV-1525: 15.7 lbs. (7.1kg)
Dimensions:	16-15/16″(W)×14-5/16″(D)×4-1/4″(H) (430mm×364mm×108mm)
Accessories Supplied:	• Remote control unit (PV-1525) • Wireless Remote control unit (PV-1530) • VHF connecting cable • 300Ω—75Ω transformer • Twin-lead cable • V-Lock Tool
Available Tapes:	1/2″ VHS video cassette tapes NV-T160 Approx. 1073ft. (327m), 160, 320, or 480 min. NV-T120 Approx. 810ft. (247m), 120, 240, or 360 min. NV-T60 Approx. 417ft. (127m), 60, 120, or 180 min.

Weight and dimensions shown are approximate.

Specifications are subject to change without notice.

Panasonic®

Matsushita Engineering & Service Company
Division of Matsushita Electric
Corporation of America
50 Meadowland Parkway, Secaucus,
New Jersey 07094

Panasonic Hawaii Inc.
91-238 Kauhi St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Matsushita Electric
of Canada Limited
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

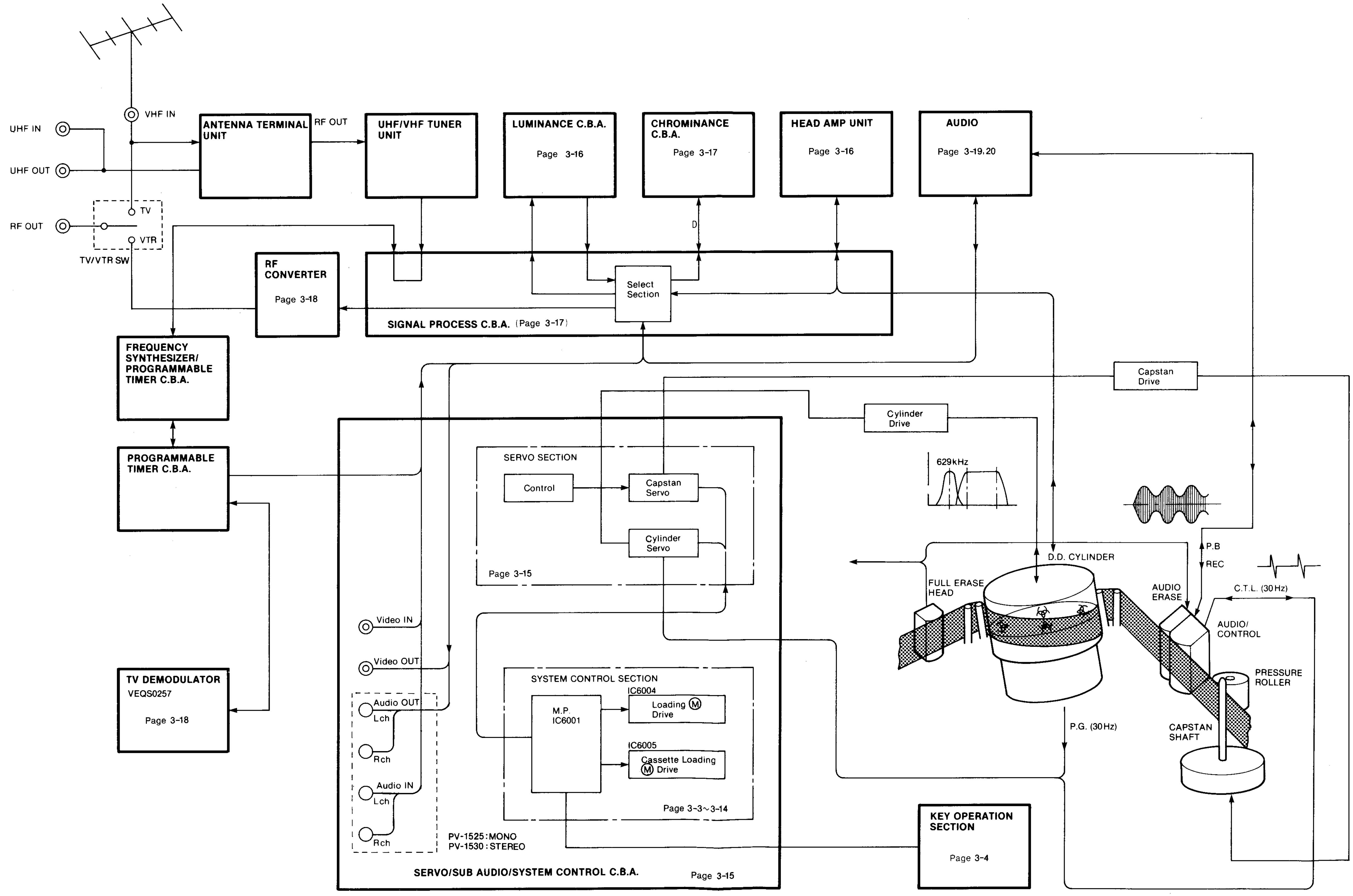
Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
Ave, 65 De Infanteria, KM 9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

CONTENTS

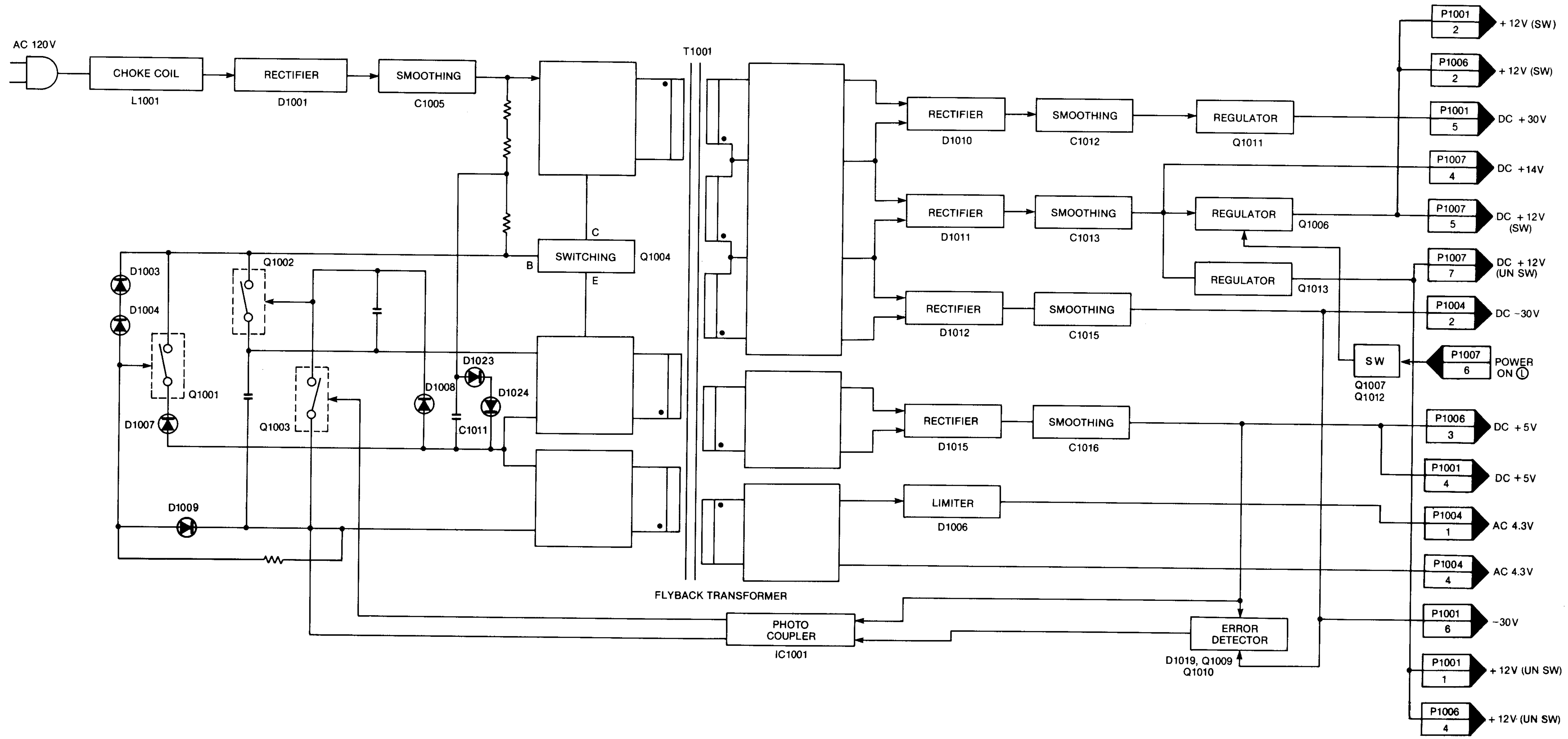
BLOCK DIAGRAM

- OVERALL 3-1
- POWER SUPPLY 3-2
- SYSTEM CONTROL 3-3
  - Safety Device 3-3
  - Key Matrix 3-4
  - FIP Drive 3-5
  - Mode Select Switch 3-5
  - Serial Data 3-6
  - Microprocessor I/O Chart 3-7
  - Mode By Mode 3-10
  - Stop → Play 3-11
  - Play → Stop 3-11
  - Stop → FF/Rew 3-12
  - FF/Rew → Stop 3-12
  - Rec • Play → Rec • Pause 3-13
  - Rec • Pause → Rec • Play 3-13
  - Play → Cue → Play 3-14
  - Play → Review → Play 3-14
- SERVO 3-15
- HEAD AMP 3-16
- LUMINANCE 3-16
- CHROMINANCE 3-17
- SIGNAL PROCESS 3-17
- TV DEMODULATOR 3-18
- RF CONVERTER 3-18
- AUDIO 3-19

OVERALL BLOCK DIAGRAM

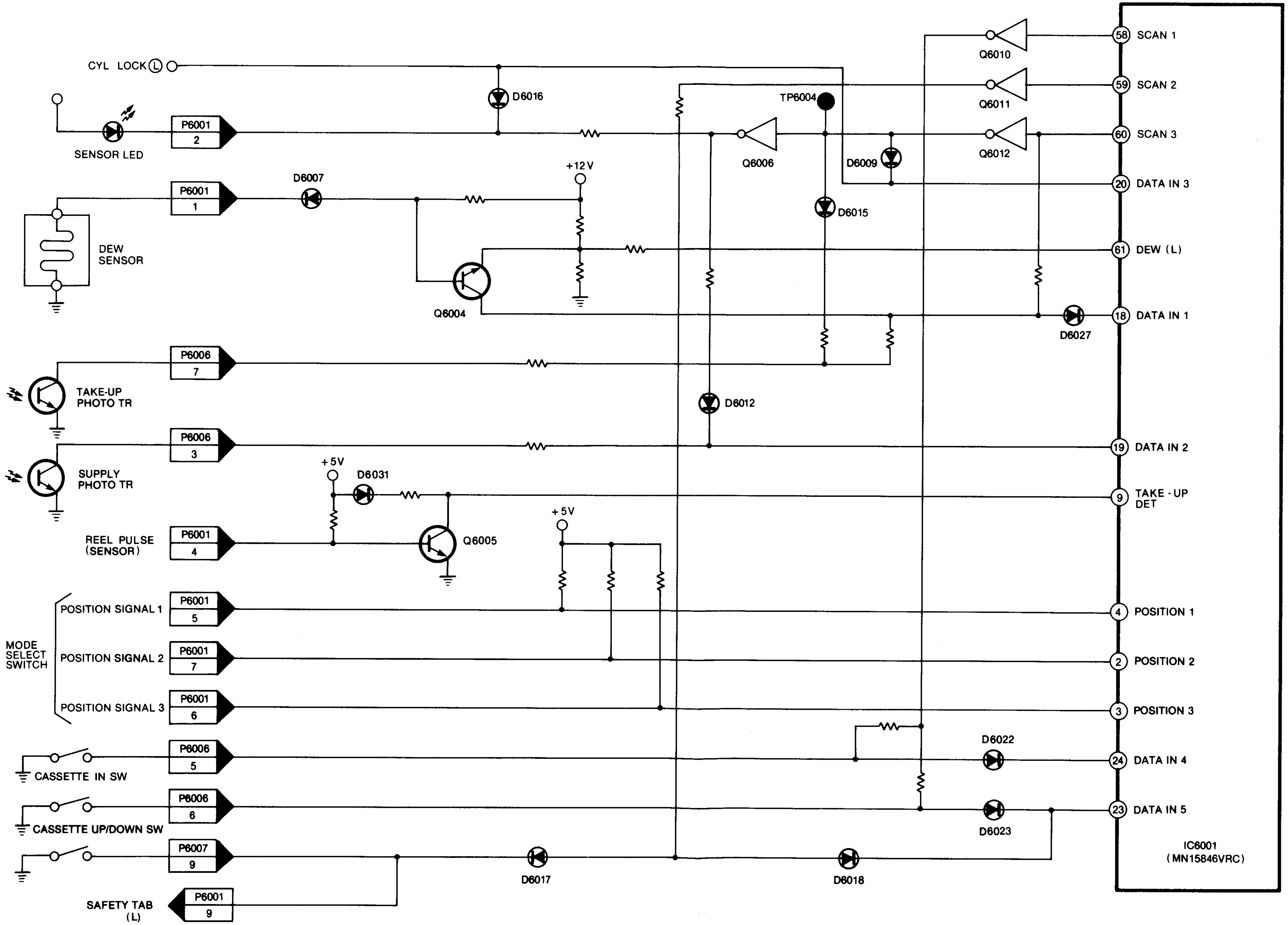

VHF IN
UHF IN
UHF OUT
RF OUT
TV
VTR
TV/VTR SW
ANTENNA TERMINAL UNIT
RF OUT
UHF/VHF TUNER UNIT
LUMINANCE C.B.A.
Page 3-16
CHROMINANCE C.B.A.
Page 3-17
HEAD AMP UNIT
Page 3-16
AUDIO
Page 3-19, 20
D
RF CONVERTER
Page 3-18
Select Section
SIGNAL PROCESS C.B.A. (Page 3-17)
FREQUENCY SYNTHESIZER/ PROGRAMMABLE TIMER C.B.A.
PROGRAMMABLE TIMER C.B.A.
TV DEMODULATOR
VEQS0257
Page 3-18
Capstan Drive
Cylinder Drive
SERVO SECTION
Control
Capstan Servo
Cylinder Servo
Page 3-15
629kHz
P.B
REC
D.D. CYLINDER
FULL ERASE HEAD
AUDIO ERASE
C.T.L. (30Hz)
AUDIO/ CONTROL
PRESSURE ROLLER
CAPSTAN SHAFT
P.G. (30Hz)
Video IN
Video OUT
Audio OUT
Lch
Rch
Audio IN
Lch
Rch
SYSTEM CONTROL SECTION
IC6004
M.P. IC6001
Loading Ⓜ Drive
IC6005
Cassette Loading Ⓜ Drive
Page 3-3~3-14
PV-1525: MONO
PV-1530: STEREO
SERVO/SUB AUDIO/SYSTEM CONTROL C.B.A.
Page 3-15
KEY OPERATION SECTION
Page 3-4

POWER SUPPLY BLOCK DIAGRAM

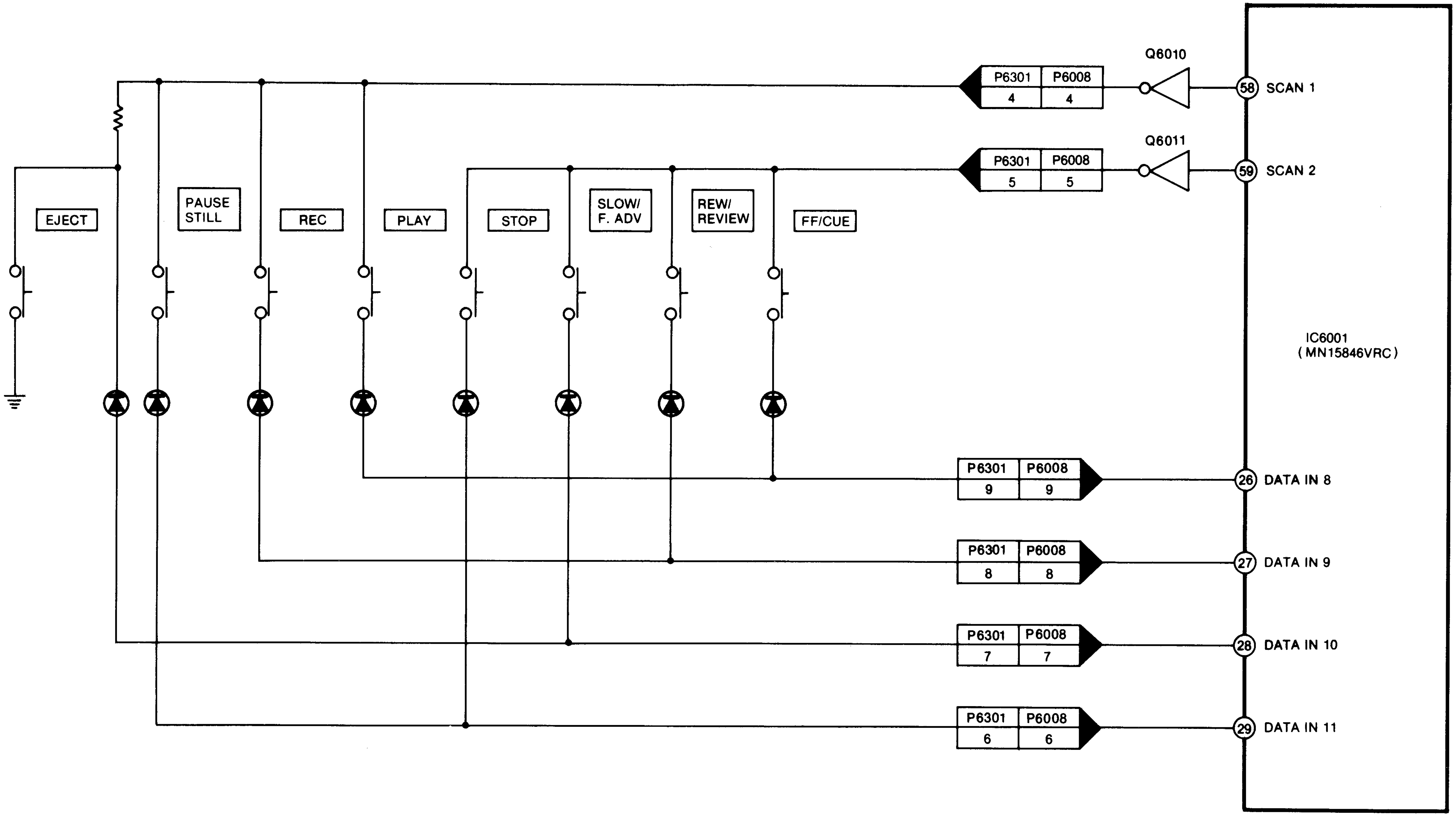


AC 120V
CHOKE COIL
L1001
RECTIFIER
D1001
SMOOTHING
C1005
T1001
SWITCHING
Q1004
C
B
E
D1003
D1004
Q1002
Q1001
D1007
Q1003
D1008
D1023
D1024
C1011
D1009
FLYBACK TRANSFORMER
PHOTO COUPLER
IC1001
RECTIFIER
D1010
SMOOTHING
C1012
REGULATOR
Q1011
RECTIFIER
D1011
SMOOTHING
C1013
REGULATOR
Q1006
REGULATOR
Q1013
RECTIFIER
D1012
SMOOTHING
C1015
SW
Q1007
Q1012
RECTIFIER
D1015
SMOOTHING
C1016
LIMITER
D1006
ERROR DETECTOR
D1019, Q1009
Q1010
P1001 2
+12V (SW)
P1006 2
+12V (SW)
P1001 5
DC +30V
P1007 4
DC +14V
P1007 5
DC +12V (SW)
P1007 7
DC +12V (UN SW)
P1004 2
DC -30V
P1007 6
POWER ON Ⓛ
P1006 3
DC +5V
P1001 4
DC +5V
P1004 1
AC 4.3V
P1004 4
AC 4.3V
P1001 6
-30V
P1001 1
+12V (UN SW)
P1006 4
+12V (UN SW)

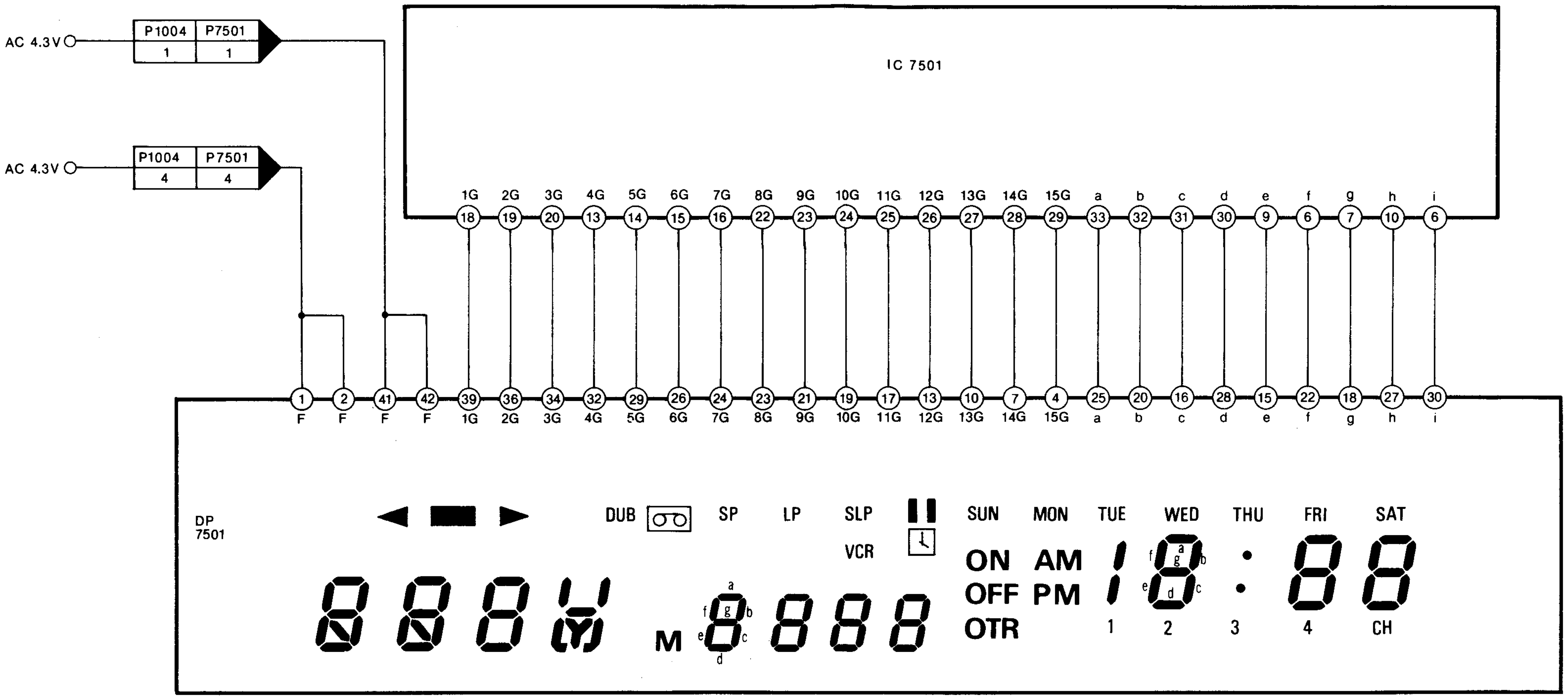
SAFETY DEVICE BLOCK DIAGRAM (SYSTEM CONTROL)


CYL LOCK Ⓛ
SENSOR LED
P6001 2
D6016
Q6010
Q6011
Q6012
Q6006
TP6004
D6009
D6015
+12V
P6001 1
D6007
DEW SENSOR
Q6004
D6027
P6006 7
TAKE-UP PHOTO TR
D6012
P6006 3
SUPPLY PHOTO TR
+5V
D6031
REEL PULSE (SENSOR)
P6001 4
Q6005
+5V
MODE SELECT SWITCH
POSITION SIGNAL 1
P6001 5
POSITION SIGNAL 2
P6001 7
POSITION SIGNAL 3
P6001 6
CASSETTE IN SW
P6006 5
D6022
CASSETTE UP/DOWN SW
P6006 6
D6023
P6007 9
D6017
D6018
SAFETY TAB (L)
P6001 9
58 SCAN 1
59 SCAN 2
60 SCAN 3
20 DATA IN 3
61 DEW (L)
18 DATA IN 1
19 DATA IN 2
9 TAKE-UP DET
4 POSITION 1
2 POSITION 2
3 POSITION 3
24 DATA IN 4
23 DATA IN 5
IC6001 (MN15846VRC)

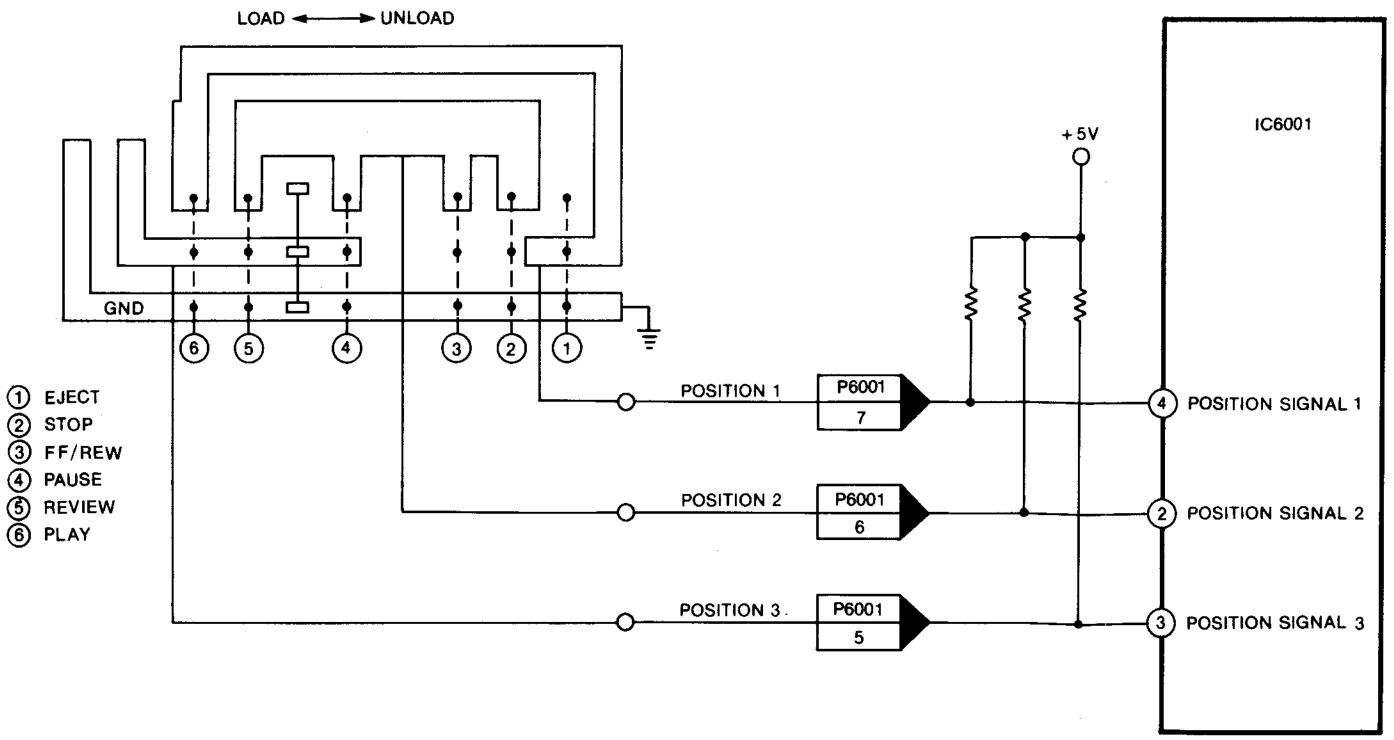
KEY MATRIX BLOCK DIAGRAM (SYSTEM CONTROL)


Q6010
P6301
P6008
4
4
58
SCAN 1
Q6011
P6301
P6008
5
5
59
SCAN 2
EJECT
PAUSE
STILL
REC
PLAY
STOP
SLOW/
F. ADV
REW/
REVIEW
FF/CUE
IC6001
(MN15846VRC)
P6301
P6008
9
9
26
DATA IN 8
P6301
P6008
8
8
27
DATA IN 9
P6301
P6008
7
7
28
DATA IN 10
P6301
P6008
6
6
29
DATA IN 11

FIP DRIVE BLOCK DIAGRAM (SYSTEM CONTROL)


AC 4.3V
P1004
P7501
1
1
AC 4.3V
P1004
P7501
4
4
IC 7501
1G 2G 3G 4G 5G 6G 7G 8G 9G 10G 11G 12G 13G 14G 15G a b c d e f g h i
18 19 20 13 14 15 16 22 23 24 25 26 27 28 29 33 32 31 30 9 6 7 10 6
1 2 41 42 39 36 34 32 29 26 24 23 21 19 17 13 10 7 4 25 20 16 28 15 22 18 27 30
F F F F 1G 2G 3G 4G 5G 6G 7G 8G 9G 10G 11G 12G 13G 14G 15G a b c d e f g h i
DP
7501
DUB
SP
LP
SLP
VCR
SUN MON TUE WED THU FRI SAT
ON AM
OFF PM
OTR
M
a
f
g
b
e
c
d
1 2 3 4 CH

MODE SELECT SWITCH BLOCK DIAGRAM (SYSTEM CONTROL)


LOAD ◄——► UNLOAD
GND
6 5 4 3 2 1
① EJECT
② STOP
③ FF/REW
④ PAUSE
⑤ REVIEW
⑥ PLAY
+5V
IC6001
POSITION 1
P6001
7
POSITION 2
P6001
6
POSITION 3
P6001
5
4 POSITION SIGNAL 1
2 POSITION SIGNAL 2
3 POSITION SIGNAL 3

SERIAL DATA TRANSMISSION (SYSTEM CONTROL)

1. Data Transmission 1 (Operational Information)

DATA NO.	OPERATION
(1)	"0" TRANSMISSION CODE
(2)	"0"
(3)	E-E ("0")/V-V ("1")
(4)	PAUSE/FLASH ("1")
(5)	OPERATION INFORMATION CODE
(6)	
(7)	
(8)	

Data Transmission of Operational Information

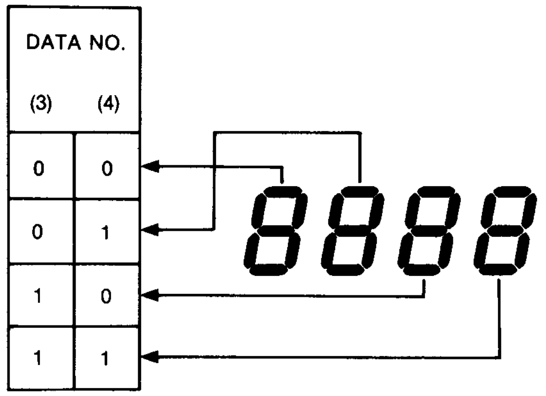
DATA NO. (5)	(6)	(7)	(8)	INFORMATION	DATA NO. (5)	(6)	(7)	(8)	INFORMATION
0	0	0	0	UNDER CUT	1	0	0	0	FF
0	0	0	1	A. DUB	1	0	0	1	REW
0	0	1	0	F. ADV	1	0	1	0	DEW
0	0	1	1	REVIEW	1	0	1	1	STOP
0	1	0	0	CUE	1	1	0	0	EJECT
0	1	0	1	PLAY	1	1	0	1	STOP
0	1	1	0	SLOW	1	1	1	0	ALL OFF
0	1	1	1	REC	1	1	1	1	POWER OFF

Data Transmission 1 (Operational Information)

2. Data Transmission 2 (Counter Number Information)

DATA NO.	OPERATION
(1)	"1" TRANSMISSION CODE
(2)	MEMORY ON ("1")/OFF ("0")
(3)	COUNTER BLOCK NO.
(4)	
(5)	COUNTER NUMBER INFORMATION
(6)	
(7)	
(8)	

Data Transmission of Counter Number Information


DATA NO.
(3) (4)
0 0
0 1
1 0
1 1
8888

Counter Position Code

DATA NO. (5)	(6)	(7)	(8)	INFORMATION	DATA NO. (5)	(6)	(7)	(8)	INFORMATION
0	0	0	0	0	0	1	0	1	5
0	0	0	1	1	0	1	1	0	6
0	0	1	0	2	0	1	1	1	7
0	0	1	1	3	1	0	0	0	8
0	1	0	0	4	1	0	0	1	9

Data Transmission 2 (Counter Number Information)

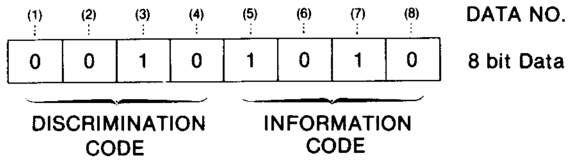
3. Data Transmission 3 (Tape Speed Information)

DATA NO.	OPERATION
(1)	"1" TRANSMISSION CODE
(2)	"0"
(3)	"0"
(4)	MEMORY ("1")/ERASE ("0")
(5)	TAPE SPEED DATA INFORMATION CODE
(6)	
(7)	
(8)	

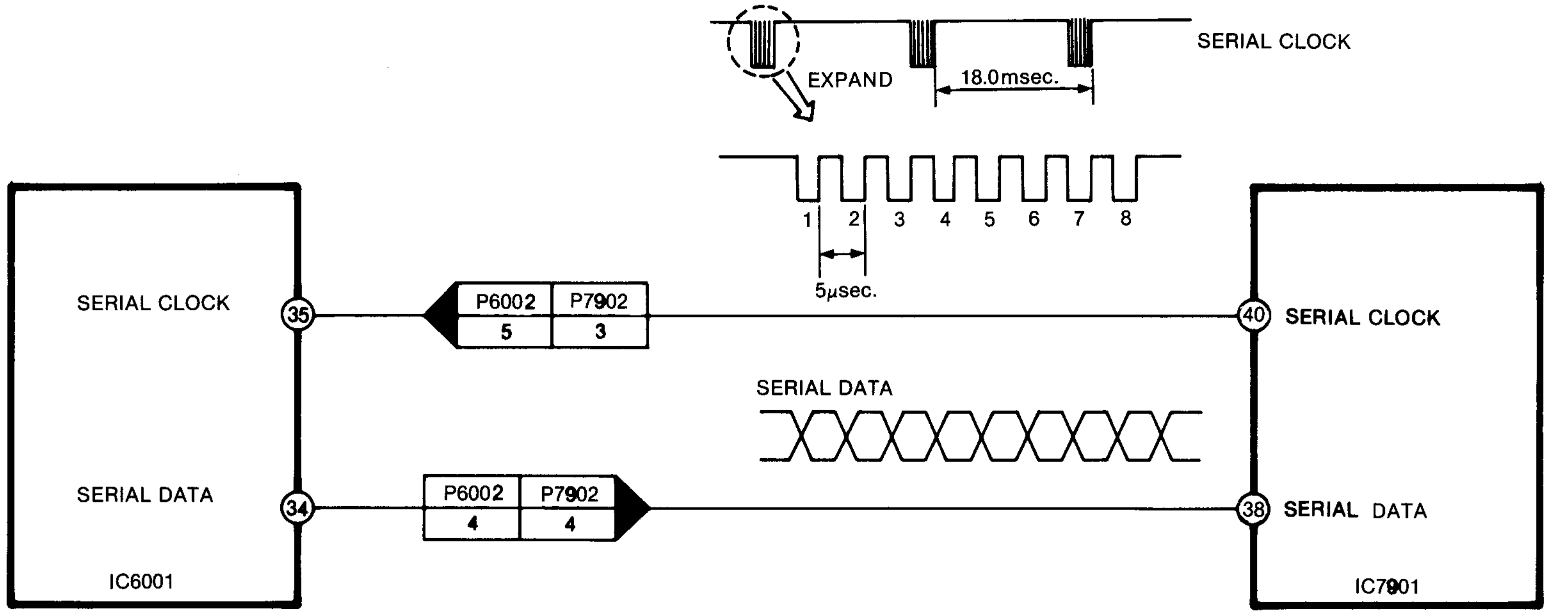
Data Transmission of Tape Speed Data Information

DATA NO. (5)	(6)	(7)	(8)	INFORMATION
1	1	0	0	SP
1	1	0	1	LP
1	1	1	0	SLP

Data Transmission 3 (Tape Speed Information)


(1) (2) (3) (4) (5) (6) (7) (8)
DATA NO.
0 0 1 0 1 0 1 0
8 bit Data
DISCRIMINATION CODE
INFORMATION CODE

8 bit Information Data


EXPAND
18.0msec.
SERIAL CLOCK
1 2 3 4 5 6 7 8
5μsec.
SERIAL CLOCK
35
P6002 5
P7902 3
40
SERIAL CLOCK
SERIAL DATA
SERIAL DATA
34
P6002 4
P7902 4
38
SERIAL DATA
IC6001
IC7901

IC6001 (MN15846VRC) I/O CHART

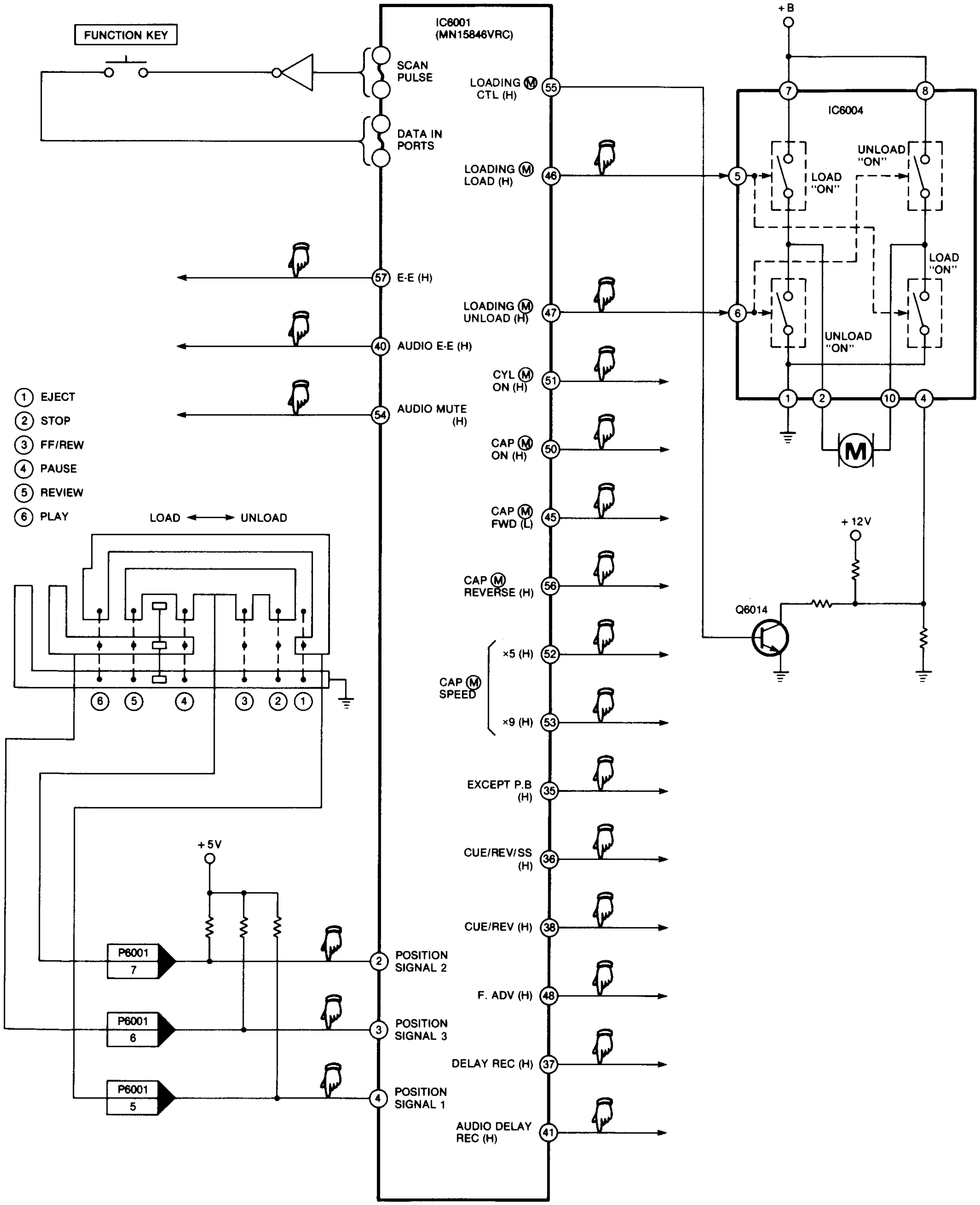
PIN	I/O	NAME/OPERATION		
1	—	GND		
2	I	POSITION SIGNAL 2		
3	I	POSITION SIGNAL 3		
4	I	POSITION SIGNAL 1		
5	—	GND		
6	I	TIMER SET (H)		
7	I	TIMER REC (H)		
8	–	NOT USED		
9	I	REEL SENSOR		
10	I	CLOCK (349kHz)		
11	I	SIRQ		
12	I	IRQ		
13	I	SERIAL CLOCK		
14	O	SERIAL DATA		
15	I	SBI		
16	I	RESET (L)		
17	I	V REF (1)		
18	I	DATA IN 1	(H)/(L)	OPERATION
			(H)	TAKE UP PHOTO TR
			(M)	DEW SENSOR
19	I	DATA IN 2	(H)/(L)	OPERATION
			(H)	SUPPLY PHOTO TR
			(M)	REMOTE PAUSE
20	I	DATA IN 3	(H)/(L)	OPERATION
			(L)	CYL LOCK
21	I	V REF		
22	—	GND		
23	I	DATA IN 5	(H)/(L)	OPERATION
			(H)	SAFETY TAB SW
			(M)	CASSETTE UP/DOWN SW
24	I	DATA IN 6	(H)/(L)	OPERATION
			(H)	SLP
			(L)	CASSETTE IN SW
25	I	DATA IN 7	(H)/(L)	OPERATION
			(H)	LP/SLP
26	I	DATA IN 8	SCAN PULSE	OPERATION
			SCAN 1	PLAY KEY
			SCAN 2	FF KEY
27	I	DATA IN 9	SCAN PULSE	OPERATION
			SCAN 1	REC KEY
			SCAN 2	REW KEY
28	I	DATA IN 10	SCAN PULSE	OPERATION
			SCAN 1	EJECT KEY
			SCAN 2	SLOW KEY

PIN	I/O	NAME/OPERATION		
29	I	DATA IN 11	SCAN PULSE	OPERATION
			SCAN 1	PAUSE KEY
			SCAN 2	STOP KEY
30	I	IR REMOTE CONTROLLER DATA (1)		
31	I	IR REMOTE CONTROLLER DATA (2)		
32	I	IR REMOTE CONTROLLER DATA (3)		
33	I	IR REMOTE CONTROLLER DATA (4)		
34	O	POWER ON (L)		
35	O	EXCEPT PLAY (H)		
36	O	CUE/REVIEW/SLOW/STILL (H)		
37	O	DELAY REC (H)		
38	O	CUE/REVIEW (H)		
39	O	LP CUE/REV		
40	O	AUDIO EE (H)		
41	O	AUDIO DELAY REC (H)		
42	O	CASSETTE LOADING MOTOR LOAD (H)		
43	O	CASSETTE LOADING MOTOR UNLOAD (H)		
44	O	SP MEMORY (H)		
45	O	CAP MOTOR FORWARD (L)		
46	O	LOADING MOTOR LOAD (H)		
47	O	LOADING MOTOR UNLOAD (H)		
48	O	F. ADV (H)		
49	O	SPEED MEMORY (L)		
50	O	CAP MOTOR ON (H)		
51	O	CYL MOTOR ON (H)		
52	O	CAP SPEED DATA X5 (H)		
53	O	CAP SPEED DATA X9 (H)		
54	O	AUDIO MUTE (H)		
55	O	LOADING MOTOR SPEED CONTROL		
56	O	CAP REVERSE (H)		
57	O	EE (H)		
58	O	SCAN 1		
59	O	SCAN 2		
60	O	SCAN 3/SENSOR LED		
61	I	DEW (L)		
62	I	OSC 1		
63	I	OSC 2		
64	I	VDD		

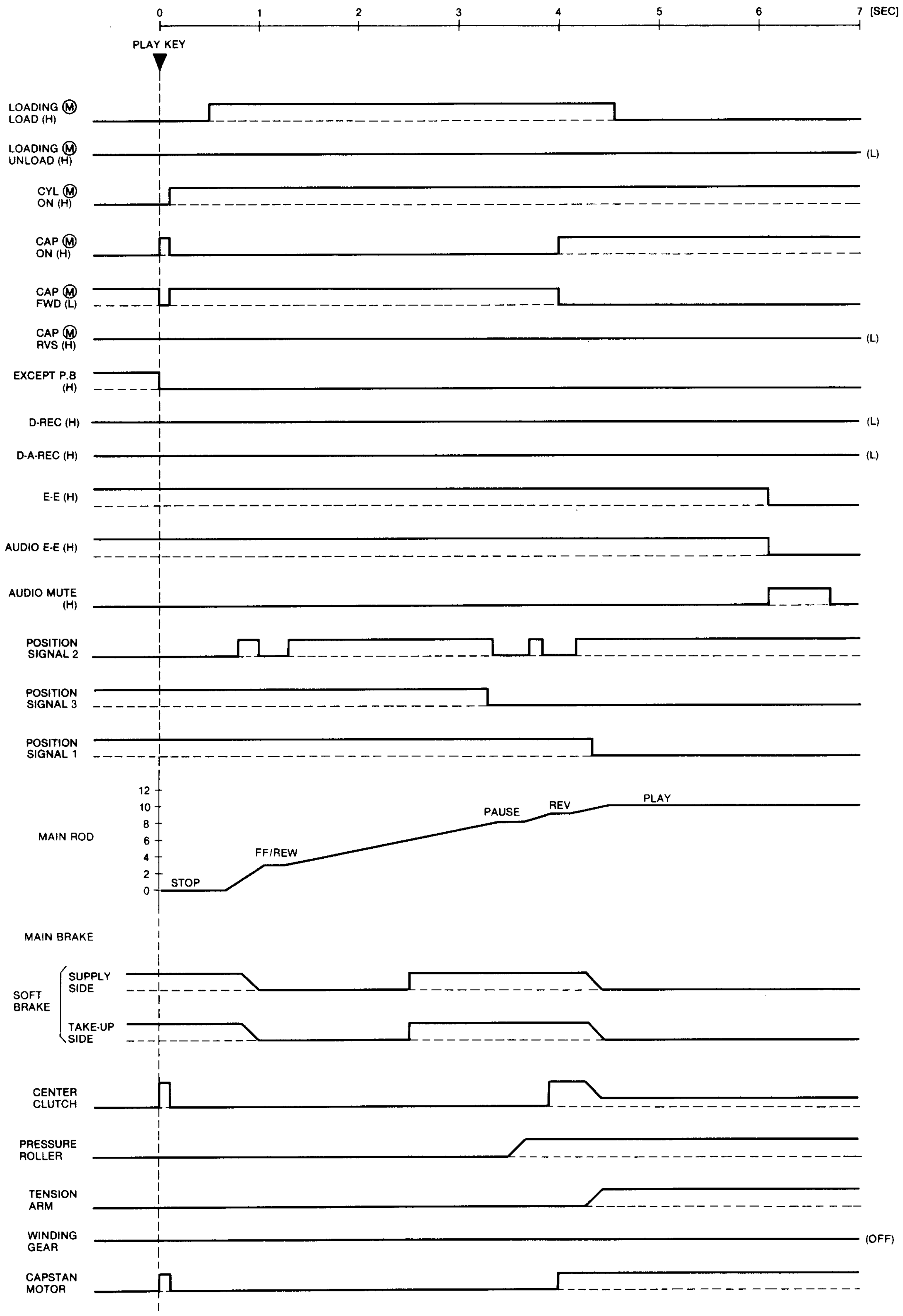
IC7501 (UPD7538C-02) I/O CHART

PIN	I/O	NAME/OPERATION		
1	I	RESET		
2	I	OSC 1		
3	I	OSC 2		
4	I	V PRE		
5	I	V LOAD		
6	O	SEGMENT i		
7	O	SEGMENT g		
8	O	SEGMENT f		
9	O	SEGMENT e		
10	O	SEGMENT h		
11	O	TIME REC (H)		
12	O	TIMER SET (H)		
13	O	GRID 4G		
14	O	GRID 5G		
15	O	GRID 6G		
16	O	GRID 7G		
17	I	DATA IN	GRID SIGNAL	OPERATION
			GRID 1G	TV/VCR SW
			GRID 2G	TIMER SET KEY
			GRID 6G	TIMER SELECT KEY
			GRID 7G	SAFETY TAB SW
			GRID 9G	CH DOWN
			GRID 10G	TIMER MODE KEY
			GRID 11G	OTR KEY
			GRID 13G	CH UP
			GRID 14G	RETURN KEY
			GRID 15G	TIMER ON/OFF KEY
18	O	GRID 1G		
19	O	GRID 2G		
20	O	GRID 3G		
21	I	VDD		
22	O	GRID 8G		
23	O	GRID 9G		
24	O	GRID 10G		
25	O	GRID 11G		
26	O	GRID 12G		
27	O	GRID 13G		
28	O	GRID 14G		
29	O	GRID 15G		
30	O	SEGMENT d		
31	O	SEGMENT c		
32	O	SEGMENT b		
33	O	SEGMENT a		
34	O	TV/VCR		
35	O	CH DOWN		
36	O	CH UP		
37	O	CH LOCK (L)		
38	I	SERIAL DATA		
39	—	NOT USED		
40	O	SERIAL CLOCK		
41	I	349kHz		
42	—	GND		

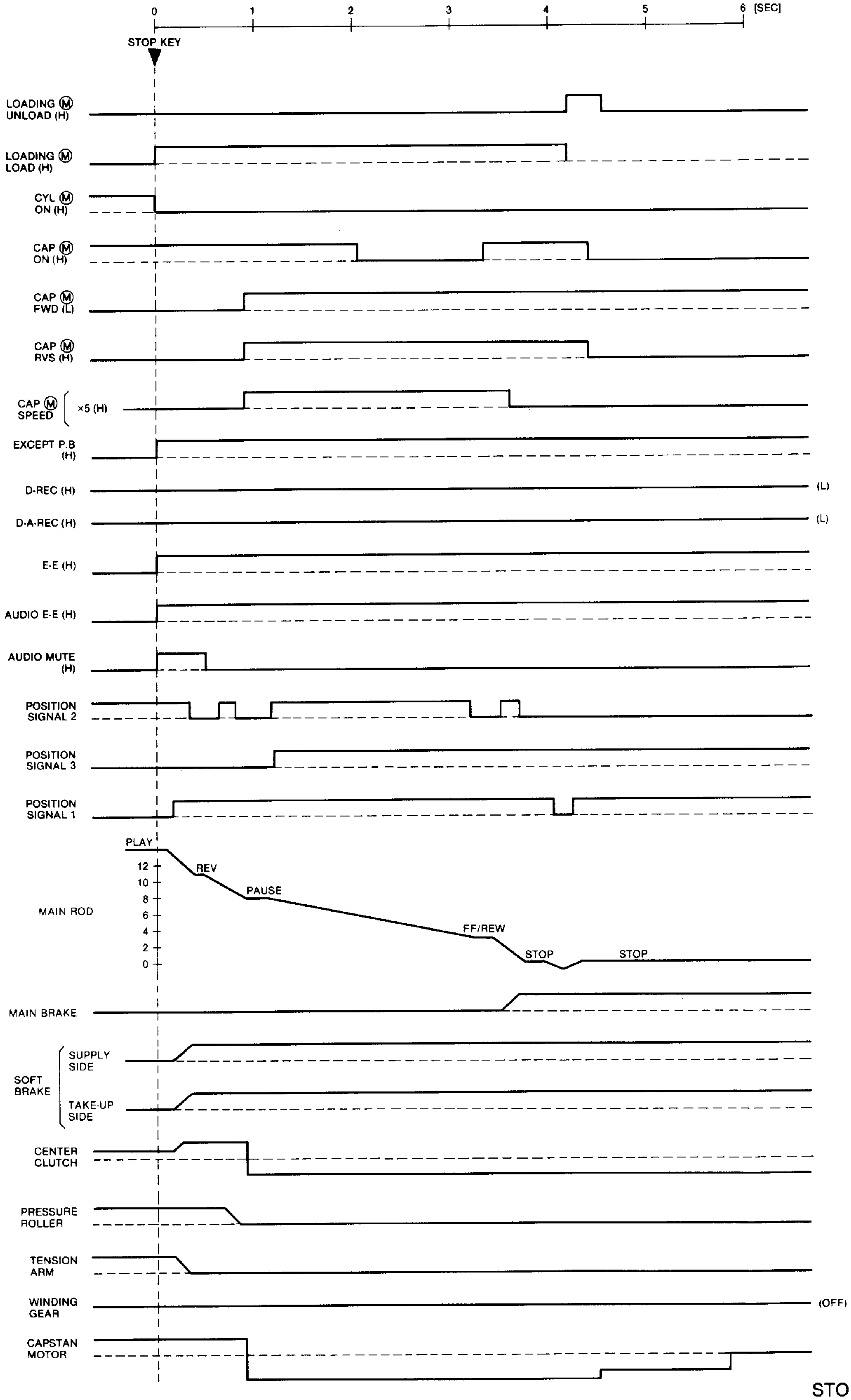
MODE BY MODE BLOCK DIAGRAM (SYSTEM CONTROL)


FUNCTION KEY
IC6001
(MN15846VRC)
SCAN PULSE
DATA IN PORTS
LOADING Ⓜ CTL (H) (55)
LOADING Ⓜ LOAD (H) (46)
LOADING Ⓜ UNLOAD (H) (47)
CYL Ⓜ ON (H) (51)
CAP Ⓜ ON (H) (50)
CAP Ⓜ FWD (L) (45)
CAP Ⓜ REVERSE (H) (56)
CAP Ⓜ SPEED
×5 (H) (52)
×9 (H) (53)
EXCEPT P.B (H) (35)
CUE/REV/SS (H) (36)
CUE/REV (H) (38)
F. ADV (H) (48)
DELAY REC (H) (37)
AUDIO DELAY REC (H) (41)
(57) E-E (H)
(40) AUDIO E-E (H)
(54) AUDIO MUTE (H)
② POSITION SIGNAL 2
③ POSITION SIGNAL 3
④ POSITION SIGNAL 1
① EJECT
② STOP
③ FF/REW
④ PAUSE
⑤ REVIEW
⑥ PLAY
LOAD ◄──► UNLOAD
⑥ ⑤ ④ ③ ② ①
+5V
P6001 7
P6001 6
P6001 5
+B
IC6004
⑦ ⑧ ⑤ ⑥ ① ② ⑩ ④
UNLOAD "ON"
LOAD "ON"
LOAD "ON"
UNLOAD "ON"
M
+12V
Q6014

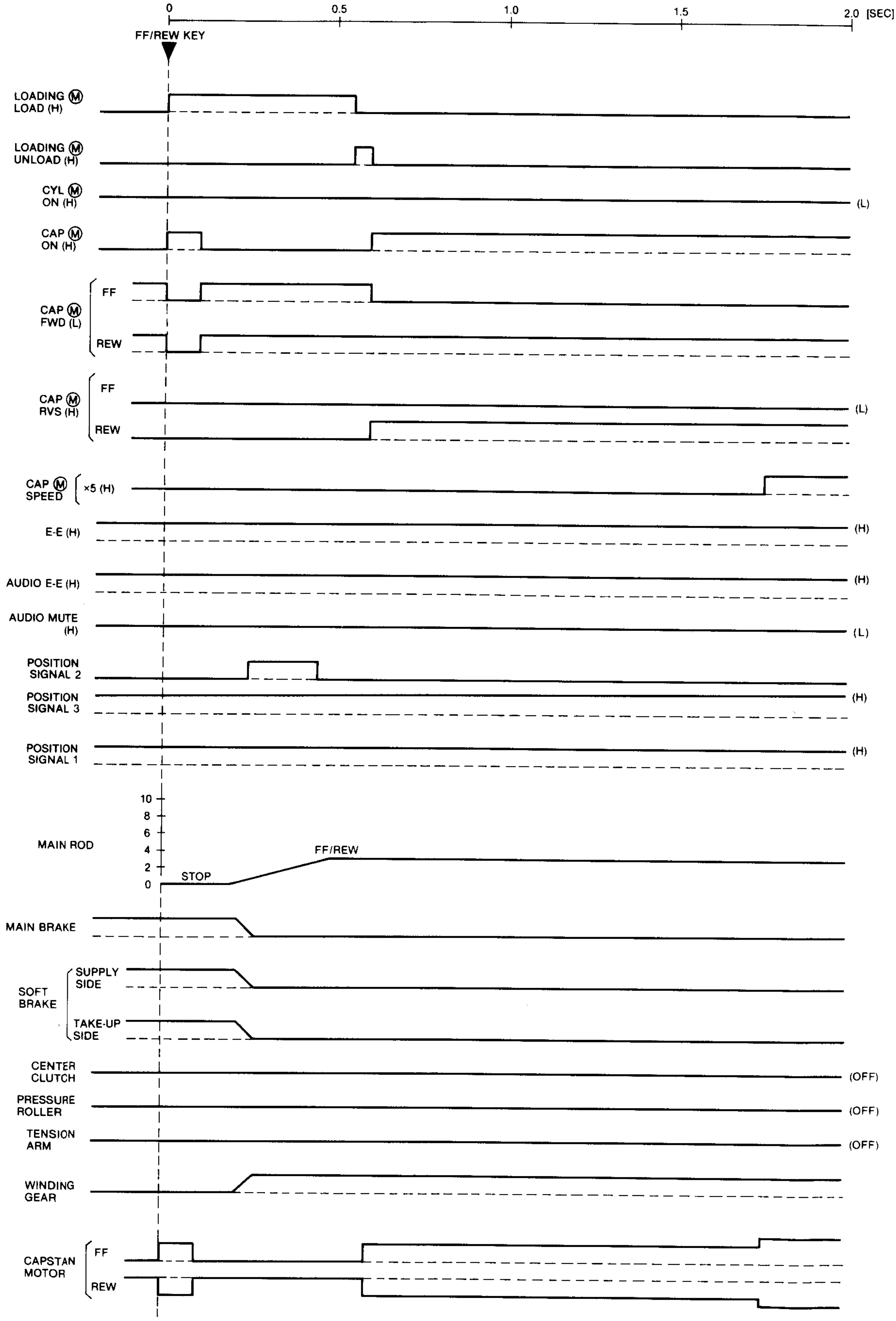
STOP → PLAY MODE TIMING CHART


0
1
2
3
4
5
6
7 (SEC)
PLAY KEY
LOADING Ⓜ LOAD (H)
LOADING Ⓜ UNLOAD (H)
(L)
CYL Ⓜ ON (H)
CAP Ⓜ ON (H)
CAP Ⓜ FWD (L)
CAP Ⓜ RVS (H)
(L)
EXCEPT P.B (H)
D-REC (H)
(L)
D-A-REC (H)
(L)
E-E (H)
AUDIO E-E (H)
AUDIO MUTE (H)
POSITION SIGNAL 2
POSITION SIGNAL 3
POSITION SIGNAL 1
MAIN ROD
12
10
8
6
4
2
0
STOP
FF/REW
PAUSE
REV
PLAY
MAIN BRAKE
SOFT BRAKE
SUPPLY SIDE
TAKE-UP SIDE
CENTER CLUTCH
PRESSURE ROLLER
TENSION ARM
WINDING GEAR
(OFF)
CAPSTAN MOTOR

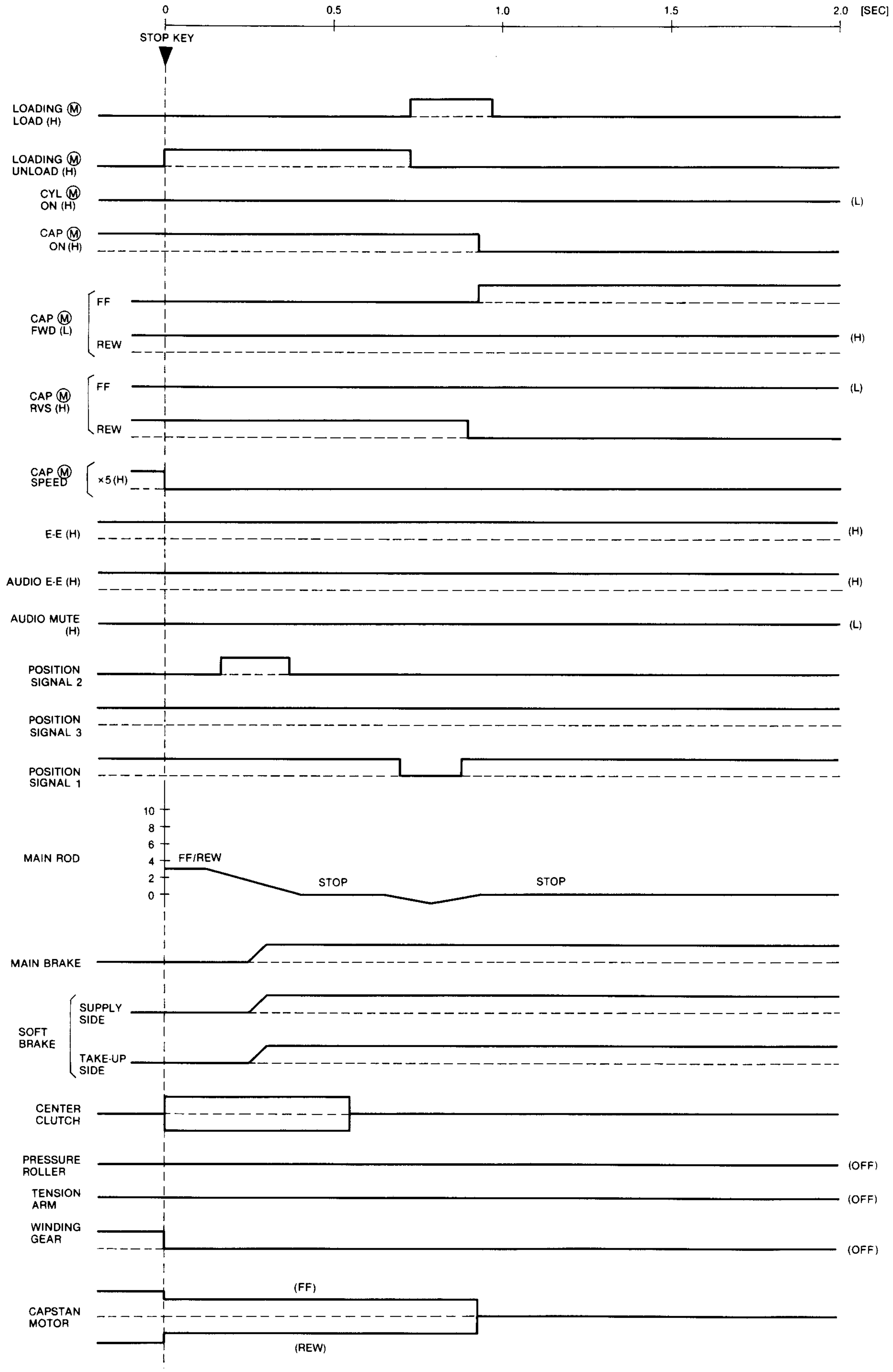
PLAY → STOP MODE TIMING CHART


0
1
2
3
4
5
6 (SEC)
STOP KEY
LOADING Ⓜ UNLOAD (H)
LOADING Ⓜ LOAD (H)
CYL Ⓜ ON (H)
CAP Ⓜ ON (H)
CAP Ⓜ FWD (L)
CAP Ⓜ RVS (H)
CAP Ⓜ SPEED ×5 (H)
EXCEPT P.B (H)
D-REC (H)
(L)
D-A-REC (H)
(L)
E-E (H)
AUDIO E-E (H)
AUDIO MUTE (H)
POSITION SIGNAL 2
POSITION SIGNAL 3
POSITION SIGNAL 1
PLAY
12
10
8
6
4
2
0
MAIN ROD
REV
PAUSE
FF/REW
STOP
STOP
MAIN BRAKE
SOFT BRAKE
SUPPLY SIDE
TAKE-UP SIDE
CENTER CLUTCH
PRESSURE ROLLER
TENSION ARM
WINDING GEAR
(OFF)
CAPSTAN MOTOR

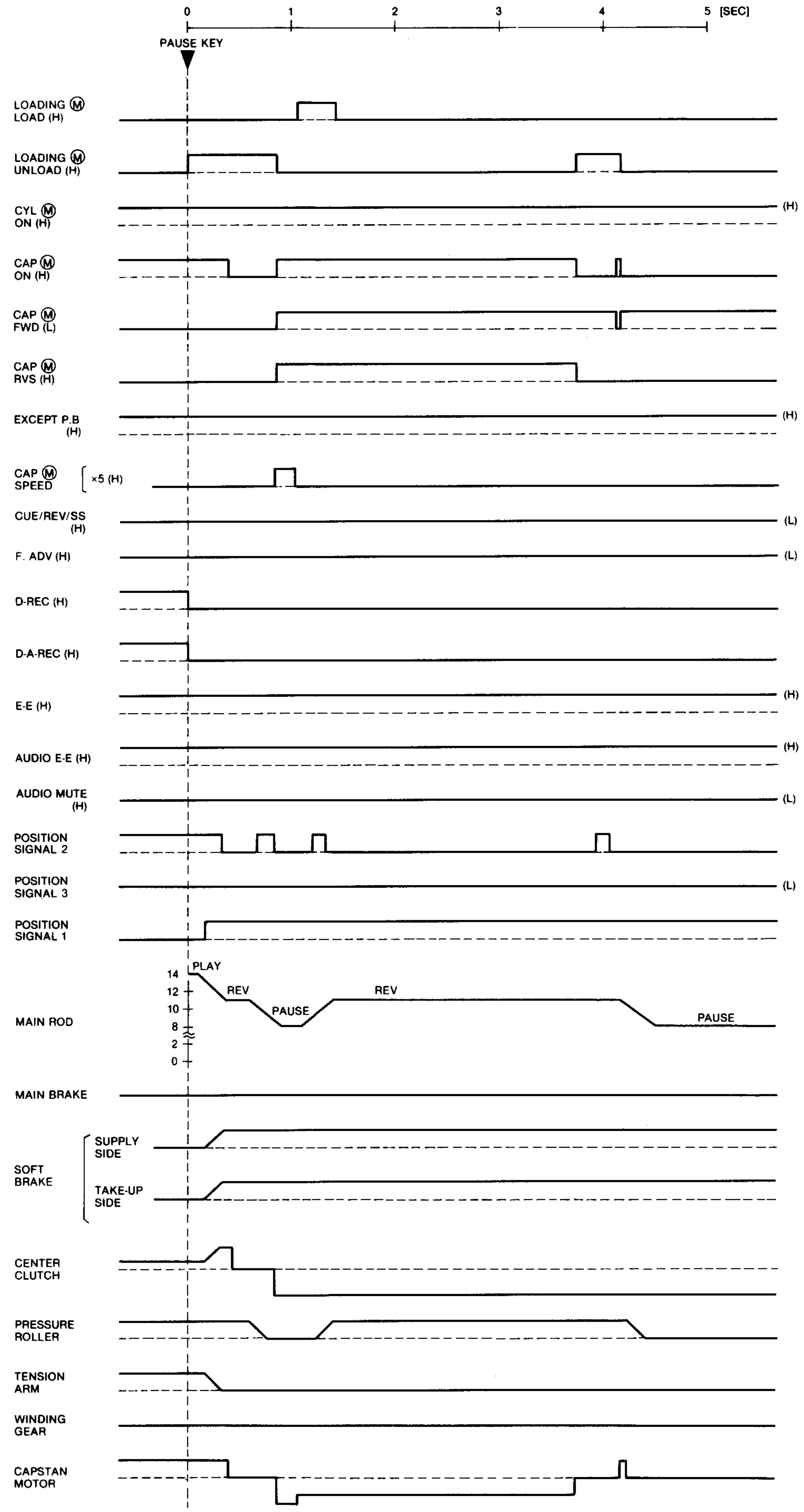
STOP → FF/REW MODE TIMING CHART


0
0.5
1.0
1.5
2.0 (SEC)
FF/REW KEY
LOADING Ⓜ LOAD (H)
LOADING Ⓜ UNLOAD (H)
CYL Ⓜ ON (H)
(L)
CAP Ⓜ ON (H)
CAP Ⓜ FWD (L)
FF
REW
CAP Ⓜ RVS (H)
FF
REW
(L)
CAP Ⓜ SPEED
×5 (H)
E-E (H)
(H)
AUDIO E-E (H)
(H)
AUDIO MUTE (H)
(L)
POSITION SIGNAL 2
POSITION SIGNAL 3
(H)
POSITION SIGNAL 1
(H)
10
8
6
4
2
0
MAIN ROD
STOP
FF/REW
MAIN BRAKE
SOFT BRAKE
SUPPLY SIDE
TAKE-UP SIDE
CENTER CLUTCH
(OFF)
PRESSURE ROLLER
(OFF)
TENSION ARM
(OFF)
WINDING GEAR
CAPSTAN MOTOR
FF
REW

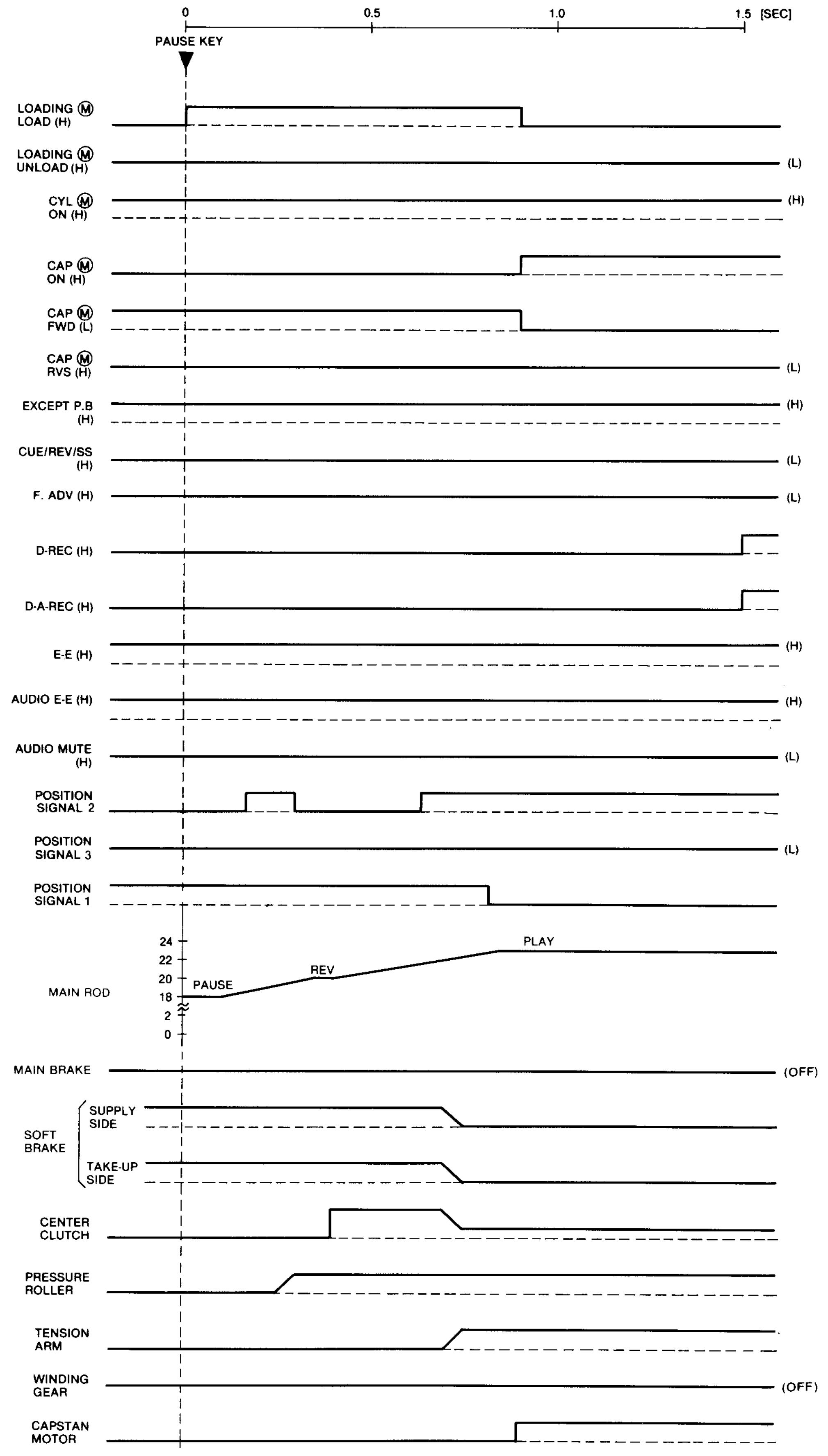
FF/REW → STOP MODE TIMING CHART


0
0.5
1.0
1.5
2.0 (SEC)
STOP KEY
LOADING Ⓜ LOAD (H)
LOADING Ⓜ UNLOAD (H)
CYL Ⓜ ON (H)
(L)
CAP Ⓜ ON (H)
CAP Ⓜ FWD (L)
FF
REW
(H)
CAP Ⓜ RVS (H)
FF
REW
(L)
CAP Ⓜ SPEED
×5 (H)
E-E (H)
(H)
AUDIO E-E (H)
(H)
AUDIO MUTE (H)
(L)
POSITION SIGNAL 2
POSITION SIGNAL 3
POSITION SIGNAL 1
10
8
6
4
2
0
MAIN ROD
FF/REW
STOP
STOP
MAIN BRAKE
SOFT BRAKE
SUPPLY SIDE
TAKE-UP SIDE
CENTER CLUTCH
PRESSURE ROLLER
(OFF)
TENSION ARM
(OFF)
WINDING GEAR
(OFF)
CAPSTAN MOTOR
(FF)
(REW)

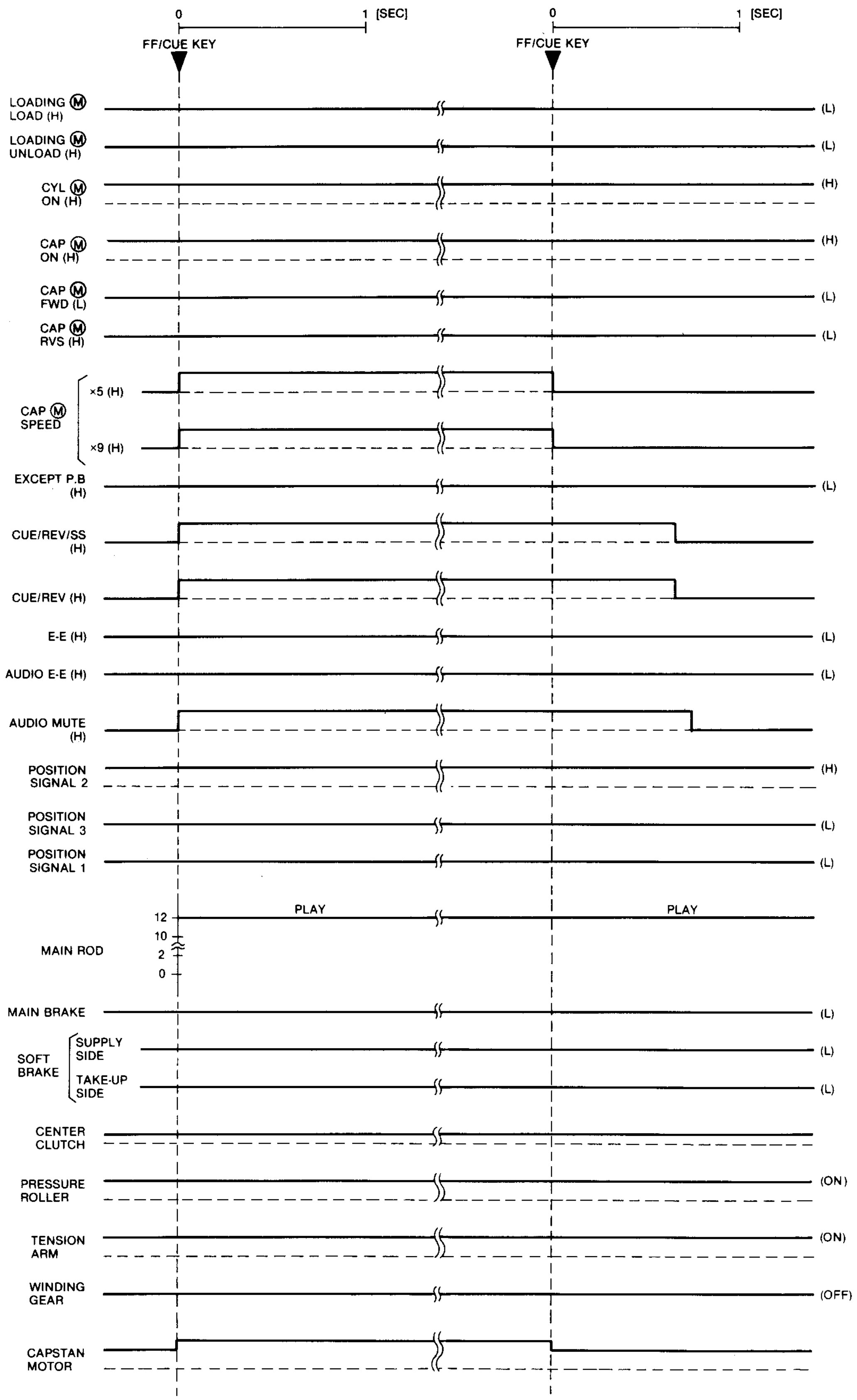
REC • PLAY → REC • PAUSE MODE TIMING CHART


0
1
2
3
4
5 [SEC]
PAUSE KEY
LOADING Ⓜ LOAD (H)
LOADING Ⓜ UNLOAD (H)
CYL Ⓜ ON (H)
(H)
CAP Ⓜ ON (H)
CAP Ⓜ FWD (L)
CAP Ⓜ RVS (H)
EXCEPT P.B (H)
(H)
CAP Ⓜ SPEED
×5 (H)
CUE/REV/SS (H)
(L)
F. ADV (H)
(L)
D-REC (H)
D-A-REC (H)
E-E (H)
(H)
AUDIO E-E (H)
(H)
AUDIO MUTE (H)
(L)
POSITION SIGNAL 2
POSITION SIGNAL 3
(L)
POSITION SIGNAL 1
MAIN ROD
14
12
10
8
2
0
PLAY
REV
PAUSE
REV
PAUSE
MAIN BRAKE
SOFT BRAKE
SUPPLY SIDE
TAKE-UP SIDE
CENTER CLUTCH
PRESSURE ROLLER
TENSION ARM
WINDING GEAR
CAPSTAN MOTOR

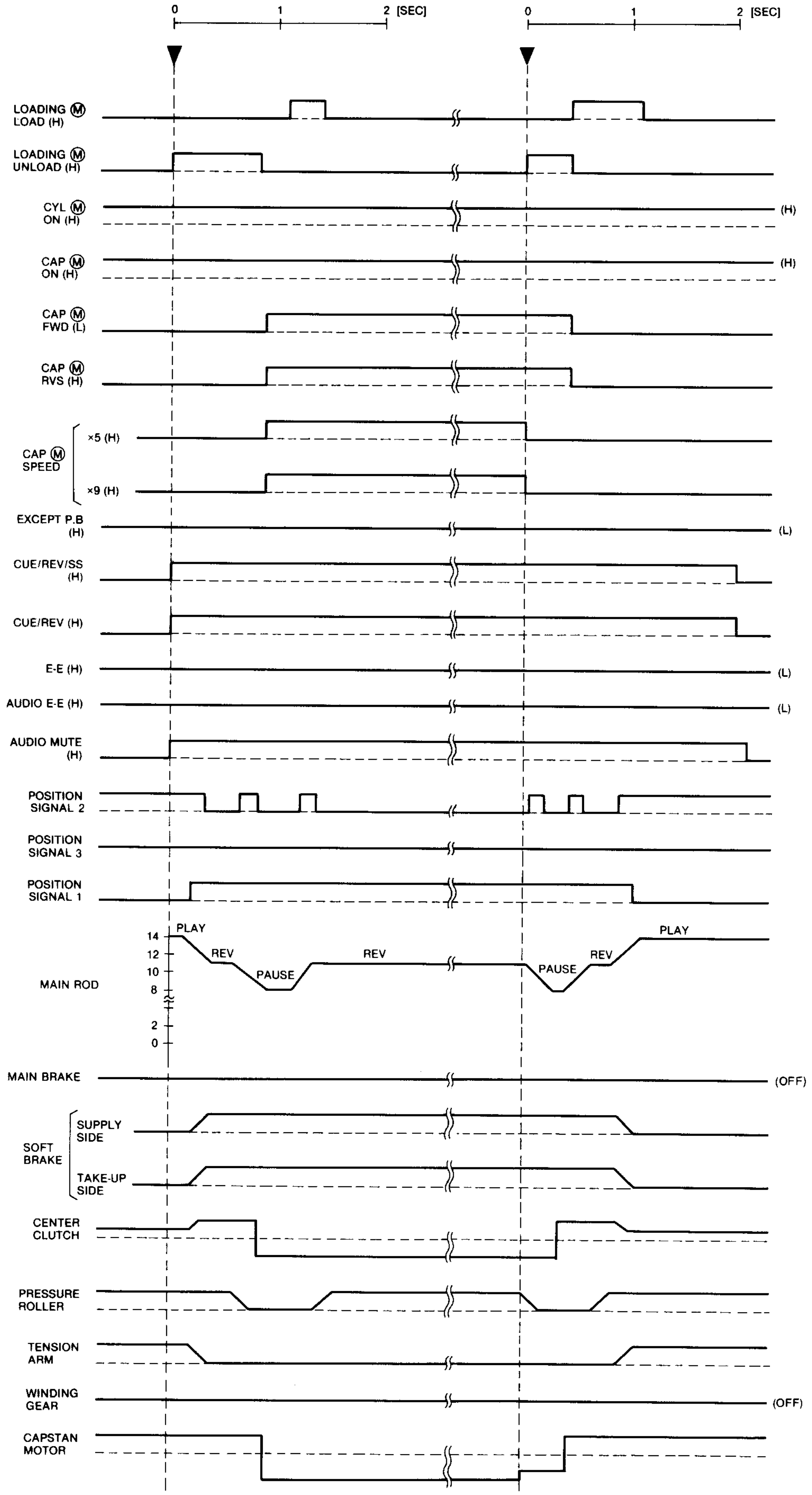
REC • PAUSE → REC • PLAY MODE TIMING CHART


0
0.5
1.0
1.5 [SEC]
PAUSE KEY
LOADING Ⓜ LOAD (H)
LOADING Ⓜ UNLOAD (H)
(L)
CYL Ⓜ ON (H)
(H)
CAP Ⓜ ON (H)
CAP Ⓜ FWD (L)
CAP Ⓜ RVS (H)
(L)
EXCEPT P.B (H)
(H)
CUE/REV/SS (H)
(L)
F. ADV (H)
(L)
D-REC (H)
D-A-REC (H)
E-E (H)
(H)
AUDIO E-E (H)
(H)
AUDIO MUTE (H)
(L)
POSITION SIGNAL 2
POSITION SIGNAL 3
(L)
POSITION SIGNAL 1
MAIN ROD
24
22
20
18
2
0
PAUSE
REV
PLAY
MAIN BRAKE
(OFF)
SOFT BRAKE
SUPPLY SIDE
TAKE-UP SIDE
CENTER CLUTCH
PRESSURE ROLLER
TENSION ARM
WINDING GEAR
(OFF)
CAPSTAN MOTOR

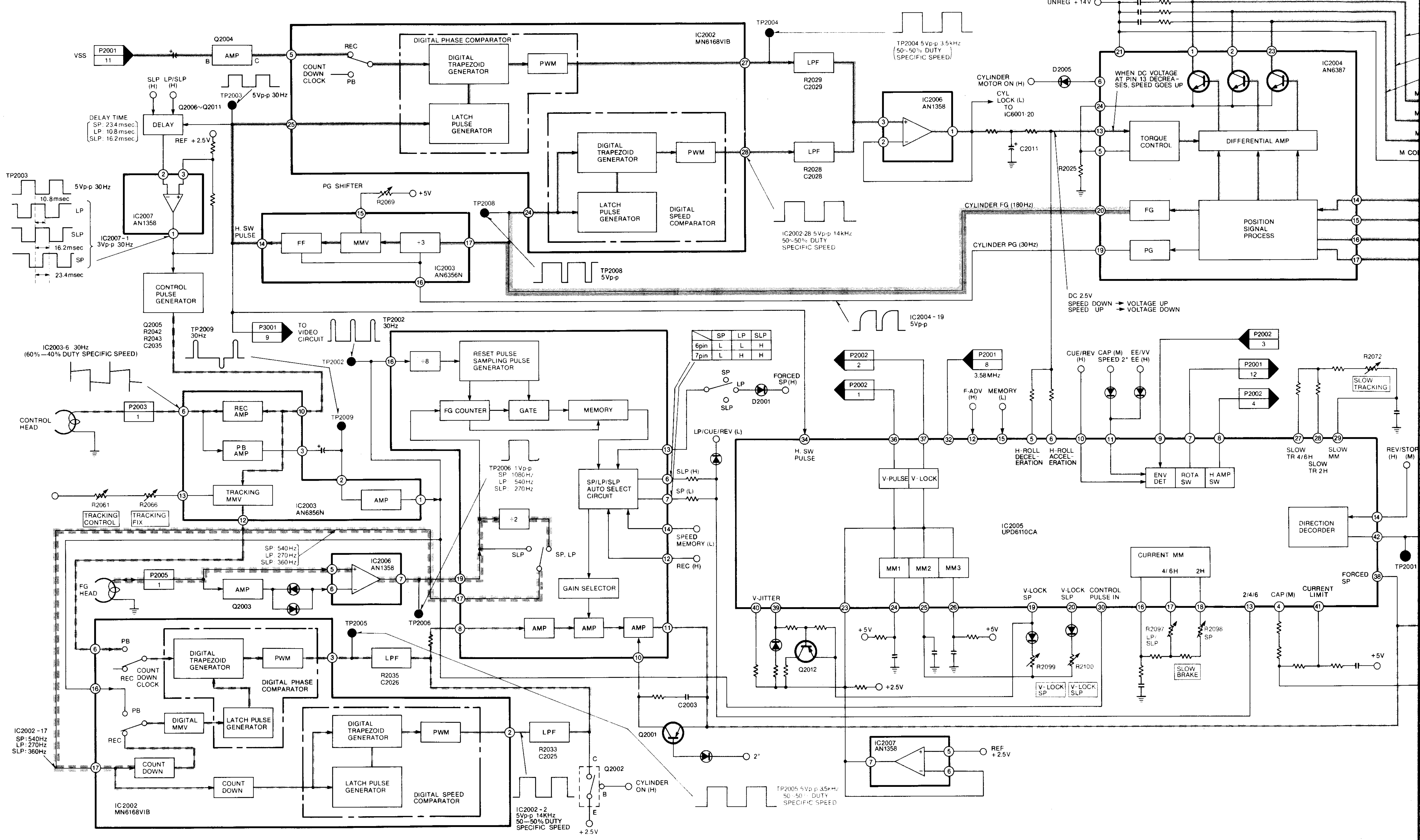
PLAY → CUE → PLAY MODE TIMING CHART


0
1 [SEC]
FF/CUE KEY
0
1 [SEC]
FF/CUE KEY
LOADING Ⓜ LOAD (H)
(L)
LOADING Ⓜ UNLOAD (H)
(L)
CYL Ⓜ ON (H)
(H)
CAP Ⓜ ON (H)
(H)
CAP Ⓜ FWD (L)
(L)
CAP Ⓜ RVS (H)
(L)
CAP Ⓜ SPEED
×5 (H)
×9 (H)
EXCEPT P.B (H)
(L)
CUE/REV/SS (H)
CUE/REV (H)
E-E (H)
(L)
AUDIO E-E (H)
(L)
AUDIO MUTE (H)
POSITION SIGNAL 2
(H)
POSITION SIGNAL 3
(L)
POSITION SIGNAL 1
(L)
MAIN ROD
12
10
2
0
PLAY
PLAY
MAIN BRAKE
(L)
SOFT BRAKE
SUPPLY SIDE
(L)
TAKE-UP SIDE
(L)
CENTER CLUTCH
PRESSURE ROLLER
(ON)
TENSION ARM
(ON)
WINDING GEAR
(OFF)
CAPSTAN MOTOR

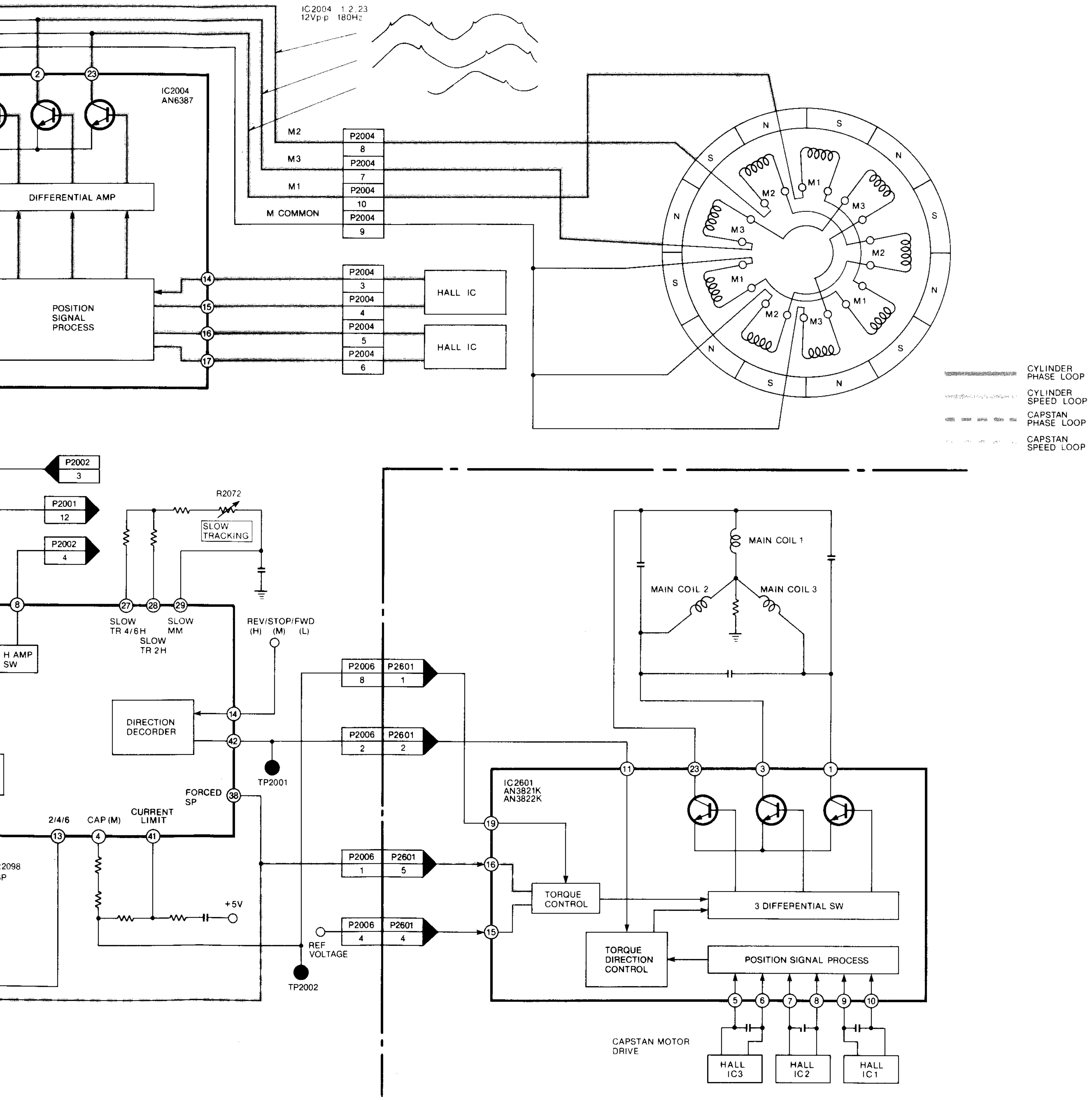
PLAY → REVIEW → PLAY MODE TIMING CHART

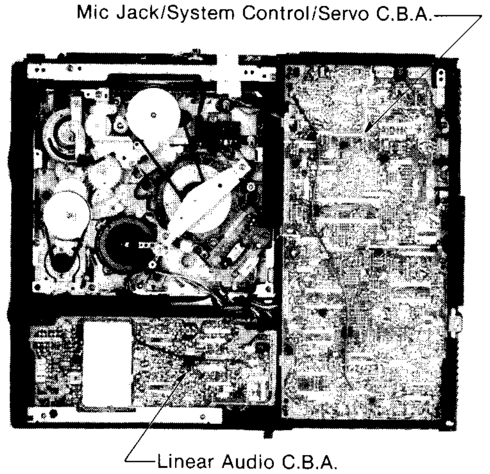

0
1
2 [SEC]
0
1
2 [SEC]
LOADING Ⓜ LOAD (H)
LOADING Ⓜ UNLOAD (H)
CYL Ⓜ ON (H)
(H)
CAP Ⓜ ON (H)
(H)
CAP Ⓜ FWD (L)
CAP Ⓜ RVS (H)
CAP Ⓜ SPEED
×5 (H)
×9 (H)
EXCEPT P.B (H)
(L)
CUE/REV/SS (H)
CUE/REV (H)
E-E (H)
(L)
AUDIO E-E (H)
(L)
AUDIO MUTE (H)
POSITION SIGNAL 2
POSITION SIGNAL 3
POSITION SIGNAL 1
MAIN ROD
14
12
10
8
2
0
PLAY
REV
PAUSE
REV
PAUSE
REV
PLAY
MAIN BRAKE
(OFF)
SOFT BRAKE
SUPPLY SIDE
TAKE-UP SIDE
CENTER CLUTCH
PRESSURE ROLLER
TENSION ARM
WINDING GEAR
(OFF)
CAPSTAN MOTOR

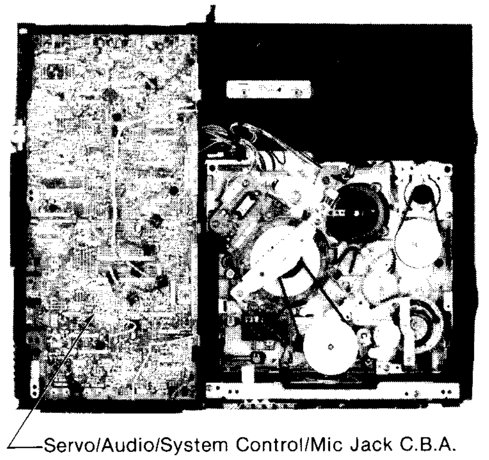
SERVO BLOCK DIAGRAM



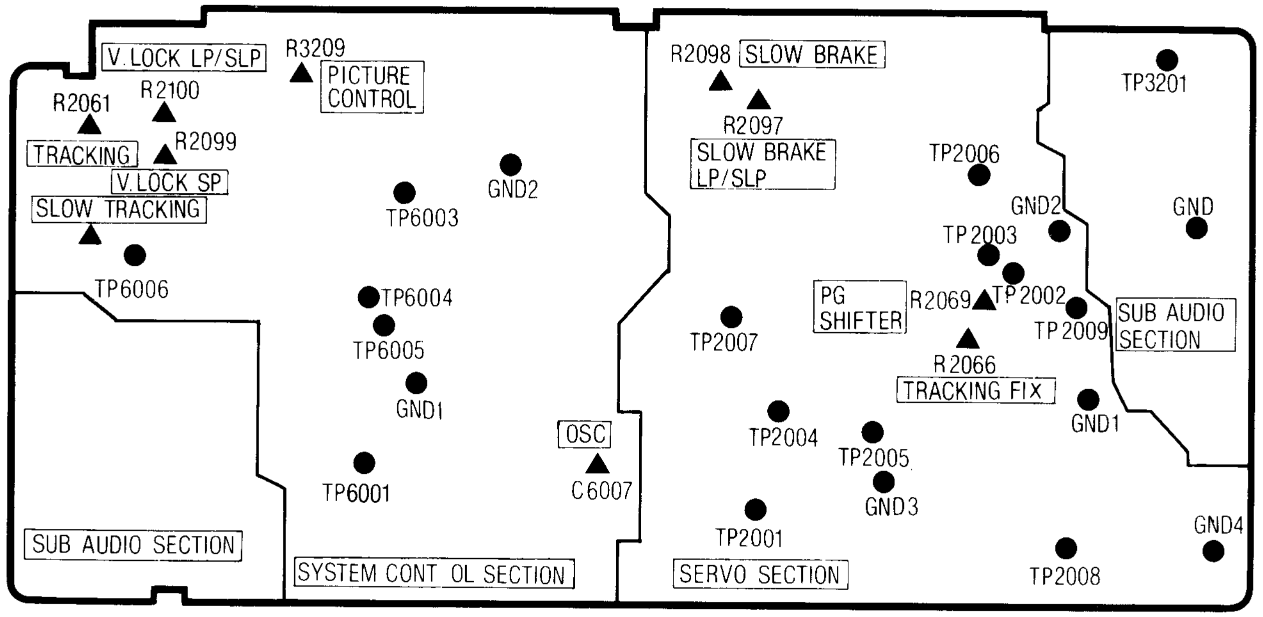
VSS
P2001
11
Q2004
AMP
B
C
IC2002
MN6168VIB
DIGITAL PHASE COMPARATOR
REC
PB
COUNT DOWN CLOCK
DIGITAL TRAPEZOID GENERATOR
PWM
LATCH PULSE GENERATOR
DIGITAL SPEED COMPARATOR
TP2004
TP2004 5Vp-p 3.5kHz 50~50% DUTY SPECIFIC SPEED
LPF
R2029
C2029
R2028
C2028
IC2002-28 5Vp-p 14kHz 50~50% DUTY SPECIFIC SPEED
IC2006
AN1358
CYLINDER MOTOR ON (H)
CYL LOCK (L) TO IC6001-20
D2005
C2011
R2025
UNREG +14V
IC2004
AN6387
WHEN DC VOLTAGE AT PIN 13 DECREASES, SPEED GOES UP
TORQUE CONTROL
DIFFERENTIAL AMP
M CO
CYLINDER FG (180Hz)
CYLINDER PG (30Hz)
FG
PG
POSITION SIGNAL PROCESS
DC 2.5V
SPEED DOWN → VOLTAGE UP
SPEED UP → VOLTAGE DOWN
IC2004-19 5Vp-p
SLP (H)
LP/SLP (H)
TP2003
5Vp-p 30Hz
Q2006~Q2011
DELAY
DELAY TIME
SP: 23.4msec
LP: 10.8msec
SLP: 16.2msec
REF +2.5V
IC2007
AN1358
IC2007-1 3Vp-p 30Hz
10.8msec
16.2msec
23.4msec
LP
SLP
SP
CONTROL PULSE GENERATOR
PG SHIFTER
R2069
+5V
TP2008
H. SW PULSE
FF
MMV
÷3
IC2003
AN6356N
TP2008 5Vp-p
Q2005
R2042
R2043
C2035
TP2009 30Hz
P3001
9
TO VIDEO CIRCUIT
TP2002 30Hz
IC2003-6 30Hz (60%—40% DUTY SPECIFIC SPEED)
CONTROL HEAD
P2003
1
REC AMP
PB AMP
TRACKING MMV
AMP
IC2003
AN6856N
R2061
R2066
TRACKING CONTROL
TRACKING FIX
TP2002
÷8
RESET PULSE SAMPLING PULSE GENERATOR
FG COUNTER
GATE
MEMORY
TP2006 1Vp-p
SP: 1080Hz
LP: 540Hz
SLP: 270Hz
SP/LP/SLP AUTO SELECT CIRCUIT
÷2
SLP
SP, LP
GAIN SELECTOR
SPEED MEMORY (L)
REC (H)
SP (L)
SP: 540Hz
LP: 270Hz
SLP: 360Hz
FG HEAD
P2005
Q2003
TP2005
TP2006
6pin
7pin
L
H
FORCED SP (H)
D2001
LP/CUE/REV (L)
DIGITAL PHASE COMPARATOR
R2035
C2026
COUNT DOWN CLOCK
DIGITAL MMV
LATCH PULSE GENERATOR
COUNT DOWN
R2033
C2025
IC2002-17
SP: 540Hz
LP: 270Hz
SLP: 360Hz
IC2002
MN6168VIB
IC2002-2 5Vp-p 14KHz 50—50% DUTY SPECIFIC SPEED
Q2002
E
+2.5V
CYLINDER ON (H)
C2003
Q2001
2°
TP2005 5Vp-p 3.5kHz 50~50% DUTY SPECIFIC SPEED
P2002
2
P2002
1
P2001
8
3.58MHz
F-ADV (H)
MEMORY (L)
CUE/REV (H)
CAP (M) SPEED 2°
EE/VV EE (H)
P2002
3
P2001
12
P2002
4
R2072
SLOW TRACKING
H. SW PULSE
V-PULSE
V-LOCK
H-ROLL DECELERATION
H-ROLL ACCELERATION
ENV DET
ROTA SW
H AMP SW
SLOW TR 4/6H
SLOW TR 2H
SLOW MM
REV/STOP (H)
IC2005
UPD6110CA
DIRECTION DECORDER
MM1
MM2
MM3
CURRENT MM
4/6H
2H
TP2001
FORCED SP
V-JITTER
V-LOCK SP
V-LOCK SLP
CONTROL PULSE IN
2/4/6
CAP (M)
CURRENT LIMIT
Q2012
+2.5V
R2099
R2100
V-LOCK SP
V-LOCK SLP
R2097 LP/SLP
R2098 SP
SLOW BRAKE
IC2007
AN1358
REF +2.5V


IC2004 1.2.23
12Vp-p 180Hz
IC2004
AN6387
DIFFERENTIAL AMP
POSITION SIGNAL PROCESS
M2
M3
M1
M COMMON
P2004
8
7
10
9
3
4
5
6
HALL IC
HALL IC
N
S
M1
M2
M3
CYLINDER PHASE LOOP
CYLINDER SPEED LOOP
CAPSTAN PHASE LOOP
CAPSTAN SPEED LOOP
P2002
P2001
12
R2072
SLOW TRACKING
SLOW TR 4/6H
SLOW TR 2H
SLOW MM
REV/STOP/FWD
(H) (M) (L)
H AMP SW
DIRECTION DECORDER
TP2001
FORCED SP
2/4/6
CAP (M)
CURRENT LIMIT
R2098
+5V
REF VOLTAGE
TP2002
P2006
P2601
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
IC2601
AN3821K
AN3822K
TORQUE CONTROL
3 DIFFERENTIAL SW
TORQUE DIRECTION CONTROL
POSITION SIGNAL PROCESS
CAPSTAN MOTOR DRIVE
HALL IC3
HALL IC2
HALL IC1

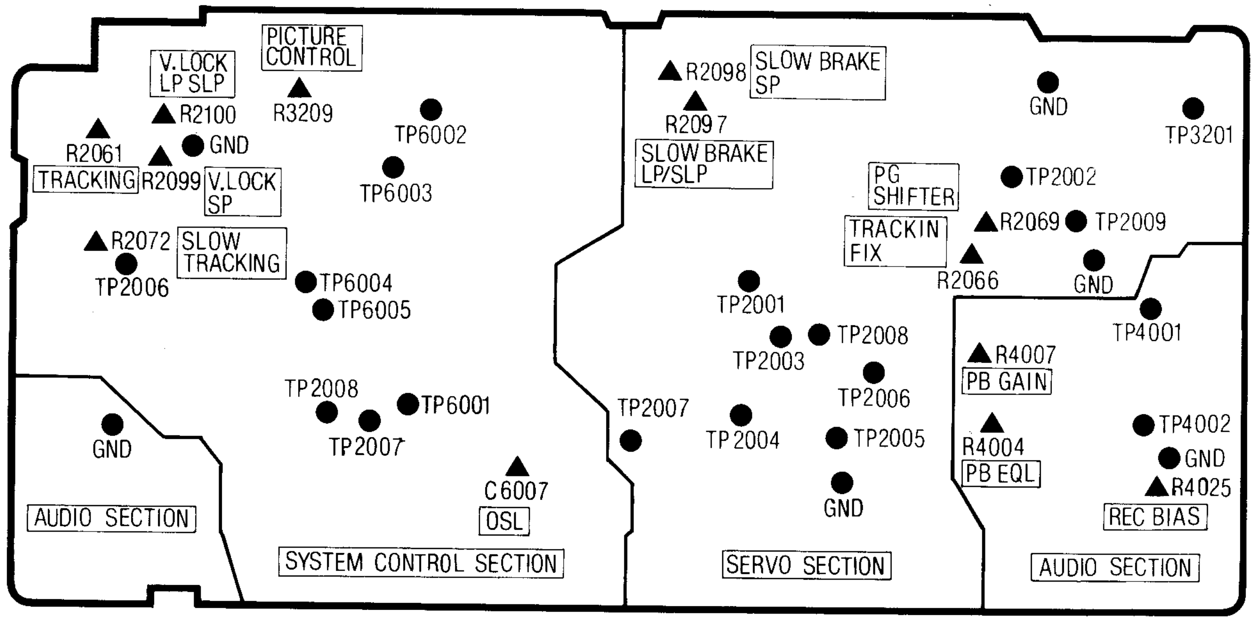

Mic Jack/System Control/Servo C.B.A.
Linear Audio C.B.A.


Servo/Audio/System Control/Mic Jack C.B.A.

LOCATION OF TEST POINTS & ADJUSTMENT POINTS

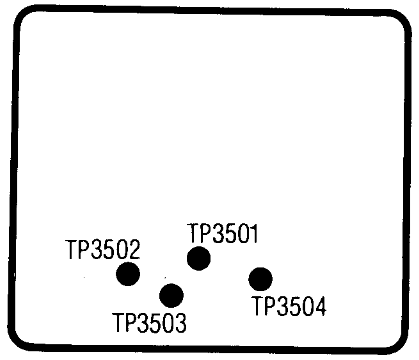

V.LOCK LP/SLP
R3209
PICTURE CONTROL
R2061
R2100
R2099
TRACKING
V.LOCK SP
SLOW TRACKING
TP6006
TP6003
GND2
TP6004
TP6005
GND1
OSC
C6007
TP6001
SUB AUDIO SECTION
SYSTEM CONT OL SECTION
R2098
SLOW BRAKE
R2097
SLOW BRAKE LP/SLP
TP2006
GND2
TP2003
TP2007
PG SHIFTER
R2069
TP2002
TP2009
R2066
TRACKING FIX
TP2004
TP2005
GND3
TP2001
SERVO SECTION
TP2008
TP3201
GND
SUB AUDIO SECTION
GND1
GND4

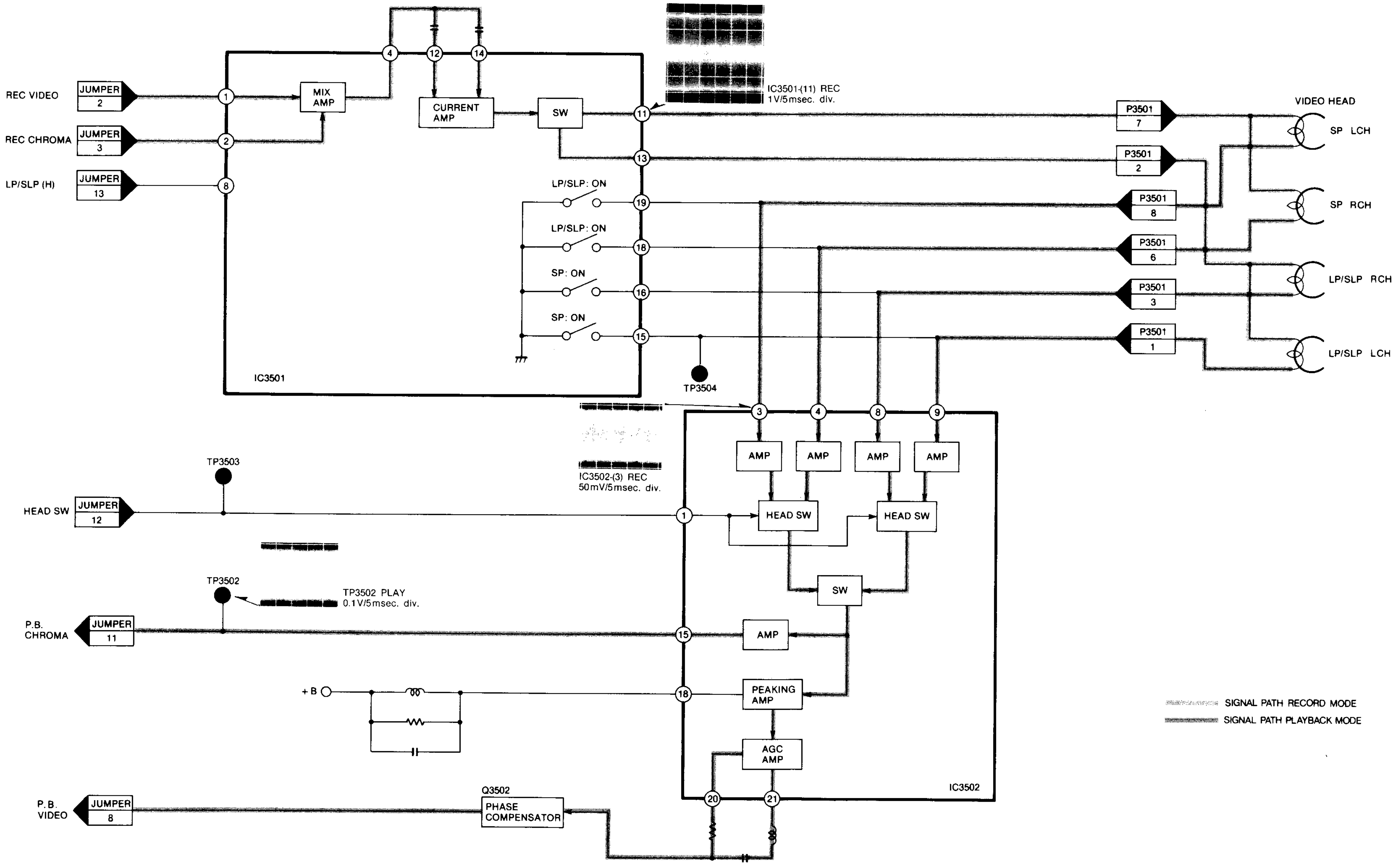
LOCATION OF TEST POINTS & ADJUSTMENT POINTS


V.LOCK LP SLP
PICTURE CONTROL
R3209
R2100
GND
R2061
TRACKING
R2099
V.LOCK SP
TP6002
TP6003
R2072
SLOW TRACKING
TP2006
TP6004
TP6005
GND
AUDIO SECTION
TP2008
TP6001
TP2007
C6007
OSL
SYSTEM CONTROL SECTION
R2098
SLOW BRAKE SP
R2097
SLOW BRAKE LP/SLP
PG SHIFTER
TRACKIN FIX
R2066
TP2002
R2069
TP2009
GND
TP2001
TP2003
TP2008
TP2006
TP2007
TP2004
TP2005
GND
SERVO SECTION
TP3201
TP4001
R4007
PB GAIN
R4004
PB EQL
TP4002
GND
R4025
REC BIAS
AUDIO SECTION

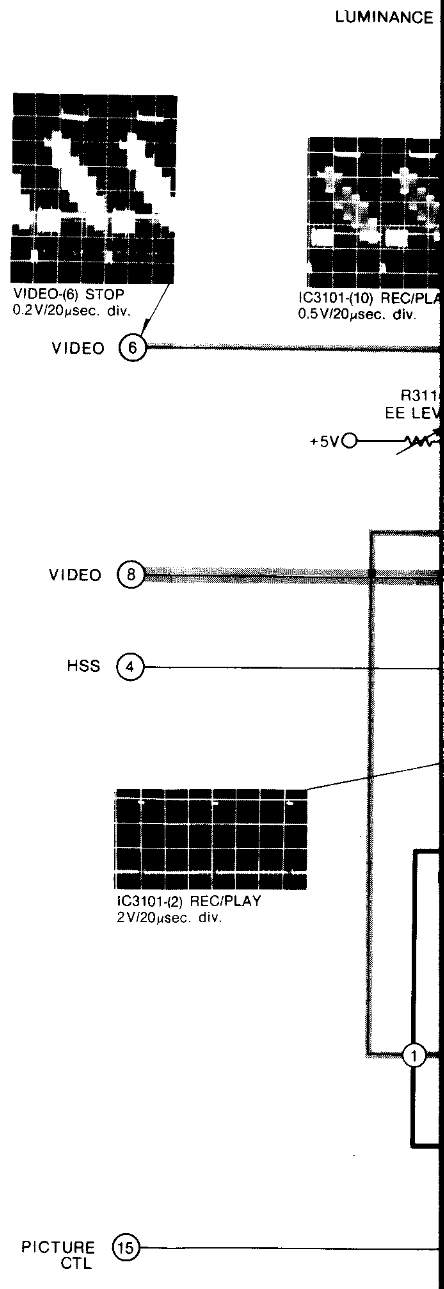
HEAD AMP BLOCK DIAGRAM

LOCATION OF TEST POINTS


TP3502
TP3501
TP3503
TP3504

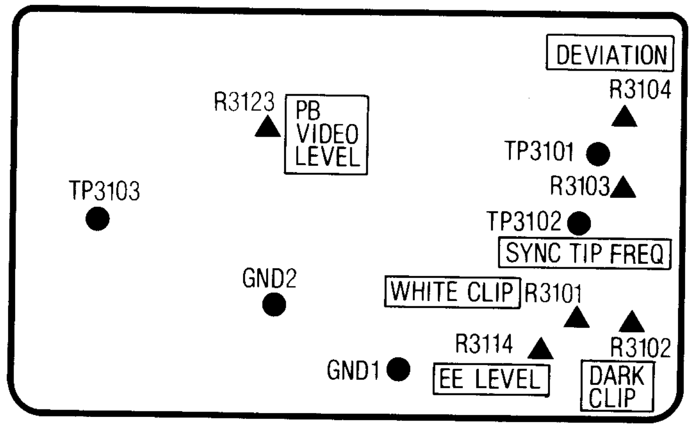

REC VIDEO
JUMPER 2
REC CHROMA
JUMPER 3
LP/SLP (H)
JUMPER 13
MIX AMP
CURRENT AMP
SW
IC3501-(11) REC
1V/5msec. div.
LP/SLP: ON
LP/SLP: ON
SP: ON
SP: ON
IC3501
TP3504
VIDEO HEAD
P3501 7
P3501 2
P3501 8
P3501 6
P3501 3
P3501 1
SP LCH
SP RCH
LP/SLP RCH
LP/SLP LCH
IC3502-(3) REC
50mV/5msec. div.
TP3503
HEAD SW
JUMPER 12
AMP
AMP
AMP
AMP
HEAD SW
HEAD SW
SW
TP3502
TP3502 PLAY
0.1V/5msec. div.
P.B. CHROMA
JUMPER 11
AMP
+B
PEAKING AMP
AGC AMP
IC3502
Q3502
P.B. VIDEO
JUMPER 8
PHASE COMPENSATOR
SIGNAL PATH RECORD MODE
SIGNAL PATH PLAYBACK MODE

LUMINANCE BLO

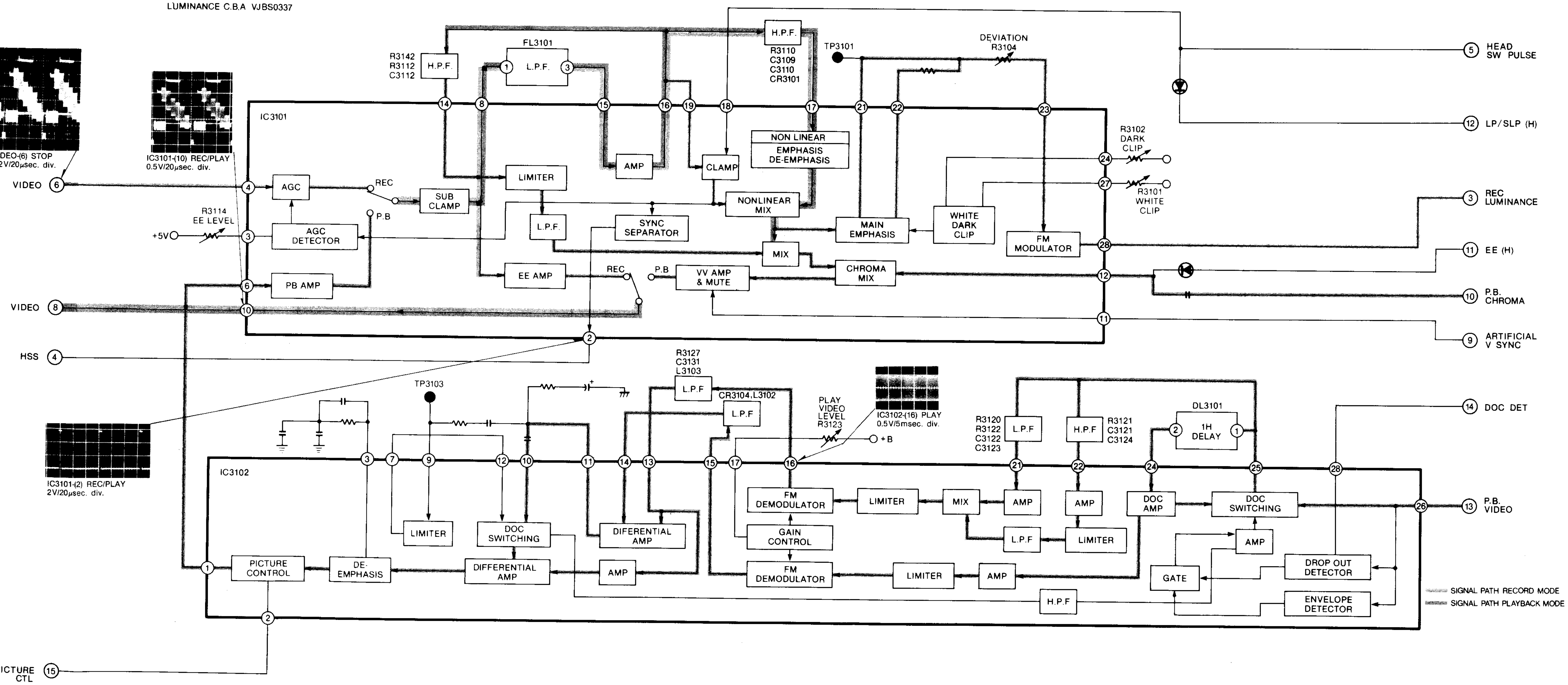

LUMINANCE
VIDEO-(6) STOP
0.2V/20μsec. div.
IC3101-(10) REC/PLA
0.5V/20μsec. div.
VIDEO 6
R311
EE LEV
+5V
VIDEO 8
HSS 4
IC3101-(2) REC/PLAY
2V/20μsec. div.
PICTURE CTL 15

LUMINANCE BLOCK DIAGRAM

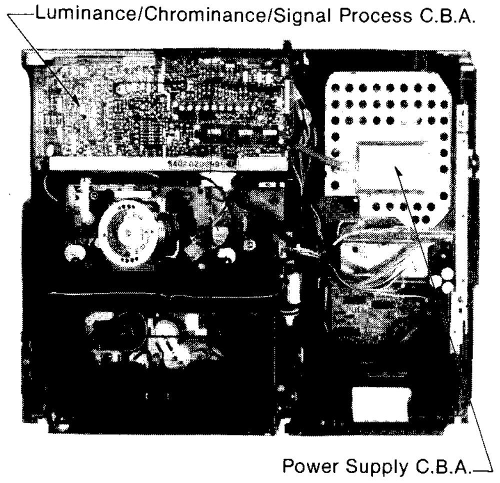
LOCATION OF TEST POINTS & ADJUSTMENT POINTS


DEVIATION
R3104
R3123
PB VIDEO LEVEL
TP3101
R3103
TP3103
TP3102
SYNC TIP FREQ
GND2
WHITE CLIP
R3101
R3114
R3102
GND1
EE LEVEL
DARK CLIP

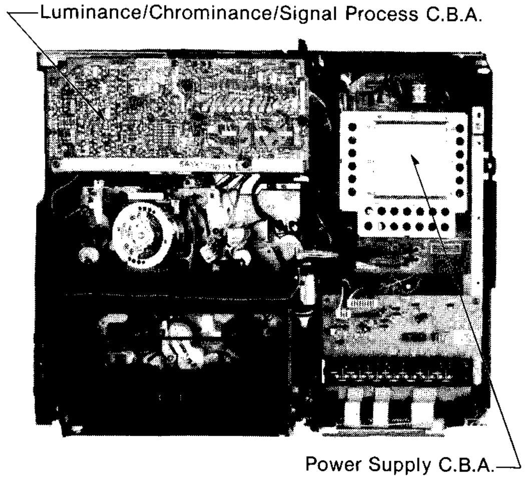
LUMINANCE C.B.A VJBS0337


DEO-(6) STOP
2V/20μsec. div.
IC3101-(10) REC/PLAY
0.5V/20μsec. div.
IC3101
VIDEO 6
VIDEO 8
HSS 4
+5V
R3114
EE LEVEL
AGC
AGC DETECTOR
PB AMP
REC
P.B
SUB CLAMP
R3142
R3112
C3112
H.P.F.
FL3101
L.P.F.
LIMITER
L.P.F.
EE AMP
AMP
SYNC SEPARATOR
CLAMP
H.P.F.
R3110
C3109
C3110
CR3101
NON LINEAR
EMPHASIS
DE-EMPHASIS
NONLINEAR MIX
MIX
VV AMP & MUTE
REC
P.B
TP3101
DEVIATION
R3104
MAIN EMPHASIS
WHITE DARK CLIP
FM MODULATOR
CHROMA MIX
R3102
DARK CLIP
R3101
WHITE CLIP
5 HEAD SW PULSE
12 LP/SLP (H)
3 REC LUMINANCE
11 EE (H)
10 P.B. CHROMA
9 ARTIFICIAL V SYNC
IC3101-(2) REC/PLAY
2V/20μsec. div.
IC3102
TP3103
R3127
C3131
L3103
L.P.F
CR3104,L3102
L.P.F
PLAY VIDEO LEVEL
R3123
+B
IC3102-(16) PLAY
0.5V/5msec. div.
LIMITER
DOC SWITCHING
DIFERENTIAL AMP
PICTURE CONTROL
DE-EMPHASIS
DIFFERENTIAL AMP
AMP
FM DEMODULATOR
GAIN CONTROL
FM DEMODULATOR
LIMITER
MIX
LIMITER
AMP
R3120
R3122
C3122
C3123
L.P.F
H.P.F
R3121
C3121
C3124
AMP
AMP
L.P.F
LIMITER
DL3101
1H DELAY
DOC AMP
DOC SWITCHING
AMP
GATE
DROP OUT DETECTOR
ENVELOPE DETECTOR
H.P.F
14 DOC DET
13 P.B. VIDEO
ICTURE CTL 15
SIGNAL PATH RECORD MODE
SIGNAL PATH PLAYBACK MODE

CHROMINANCE BLOCK DIAGRAM

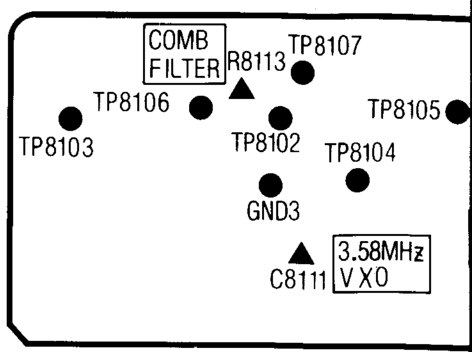


Luminance/Chrominance/Signal Process C.B.A.
Power Supply C.B.A.

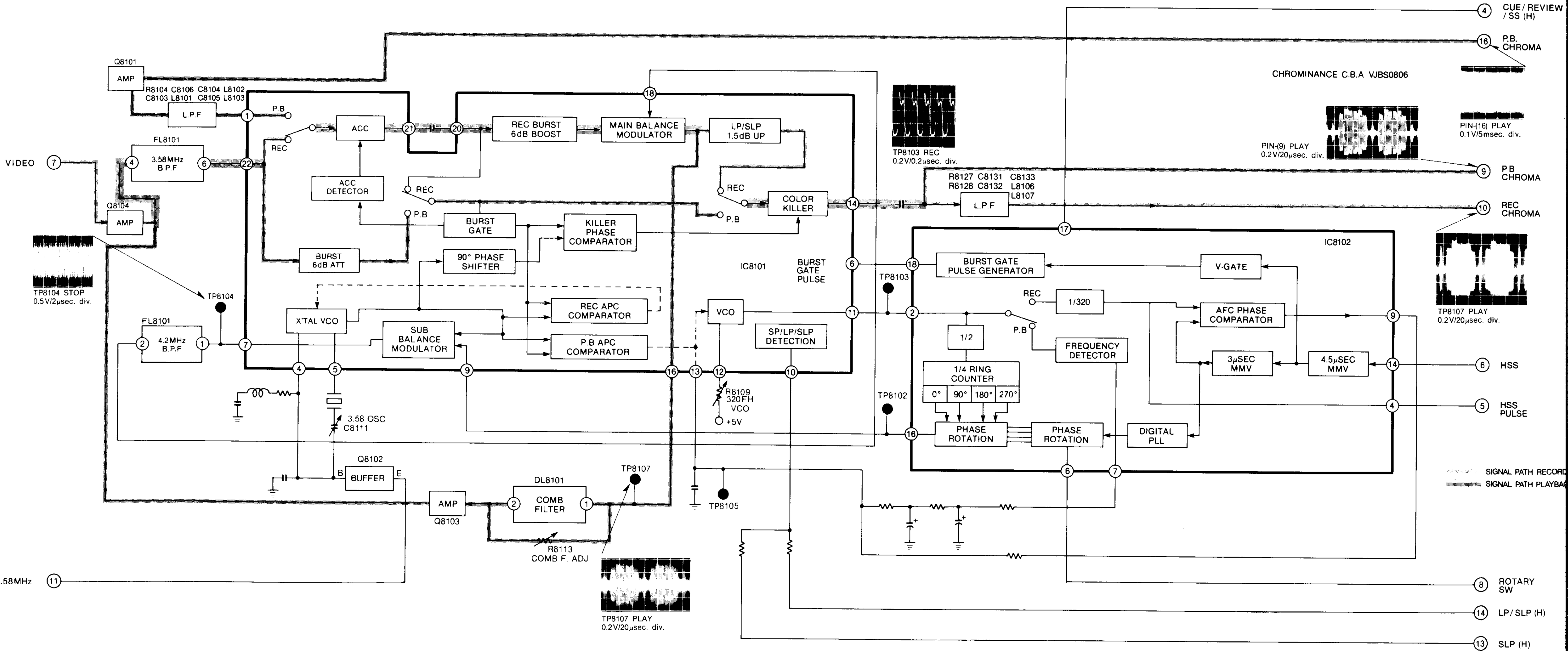


Luminance/Chrominance/Signal Process C.B.A.
Power Supply C.B.A.

LOCATION OF TEST POINTS & ADJUSTMENT

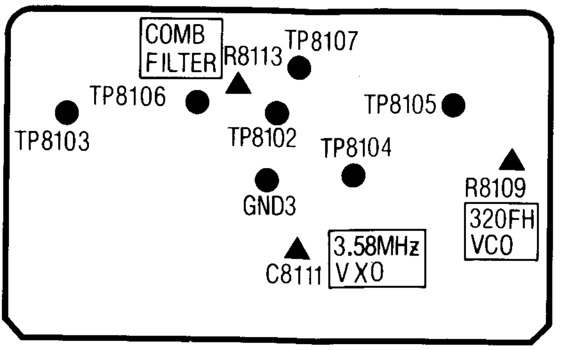


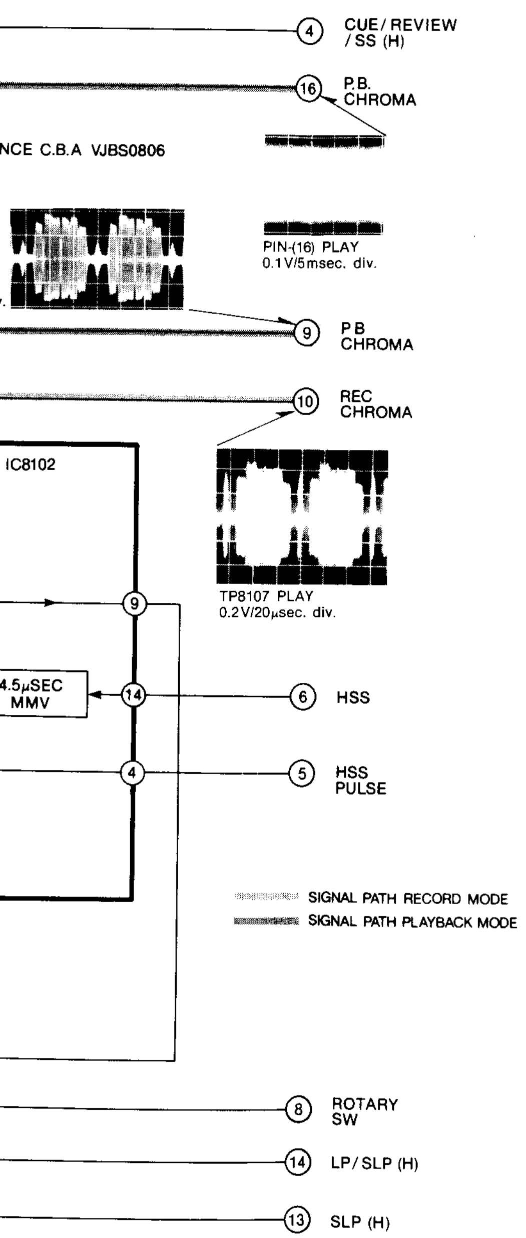
COMB FILTER
R8113
TP8107
TP8106
TP8105
TP8103
TP8102
TP8104
GND3
C8111
3.58MHz VXO



CUE/REVIEW /SS (H)
P.B. CHROMA
CHROMINANCE C.B.A VJBS0806
PIN-(16) PLAY 0.1V/5msec. div.
PIN-(9) PLAY 0.2V/20μsec. div.
P B CHROMA
REC CHROMA
TP8107 PLAY 0.2V/20μsec. div.
Q8101
AMP
R8104 C8106 C8104 L8102
C8103 L8101 C8105 L8103
L.P.F
P.B
REC
ACC
ACC DETECTOR
REC BURST 6dB BOOST
MAIN BALANCE MODULATOR
LP/SLP 1.5dB UP
COLOR KILLER
TP8103 REC 0.2V/0.2μsec. div.
R8127 C8131 C8133
R8128 C8132 L8106
L8107
FL8101
3.58MHz B.P.F
VIDEO
Q8104
AMP
BURST GATE
KILLER PHASE COMPARATOR
BURST 6dB ATT
90° PHASE SHIFTER
IC8101
BURST GATE PULSE
TP8104 STOP 0.5V/2μsec. div.
TP8104
FL8101
4.2MHz B.P.F
X'TAL VCO
SUB BALANCE MODULATOR
REC APC COMPARATOR
P.B APC COMPARATOR
VCO
SP/LP/SLP DETECTION
R8109 320FH VCO
+5V
3.58 OSC C8111
Q8102
BUFFER
B
E
AMP
Q8103
DL8101
COMB FILTER
R8113 COMB F. ADJ
TP8107
TP8105
TP8107 PLAY 0.2V/20μsec. div.
3.58MHz
IC8102
BURST GATE PULSE GENERATOR
V-GATE
TP8103
TP8102
1/320
AFC PHASE COMPARATOR
1/2
FREQUENCY DETECTOR
1/4 RING COUNTER
0° 90° 180° 270°
3μSEC MMV
4.5μSEC MMV
PHASE ROTATION
PHASE ROTATION
DIGITAL PLL
HSS
HSS PULSE
ROTARY SW
LP/SLP (H)
SLP (H)
SIGNAL PATH RECORD
SIGNAL PATH PLAYBA
1 2 4 5 6 7 9 10 11 12 13 14 16 17 18 20 21 22

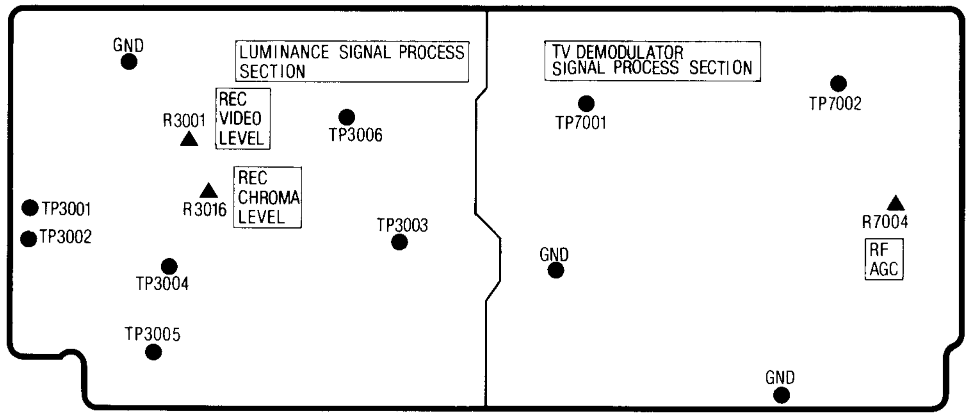
LOCATION OF TEST POINTS & ADJUSTMENT POINTS

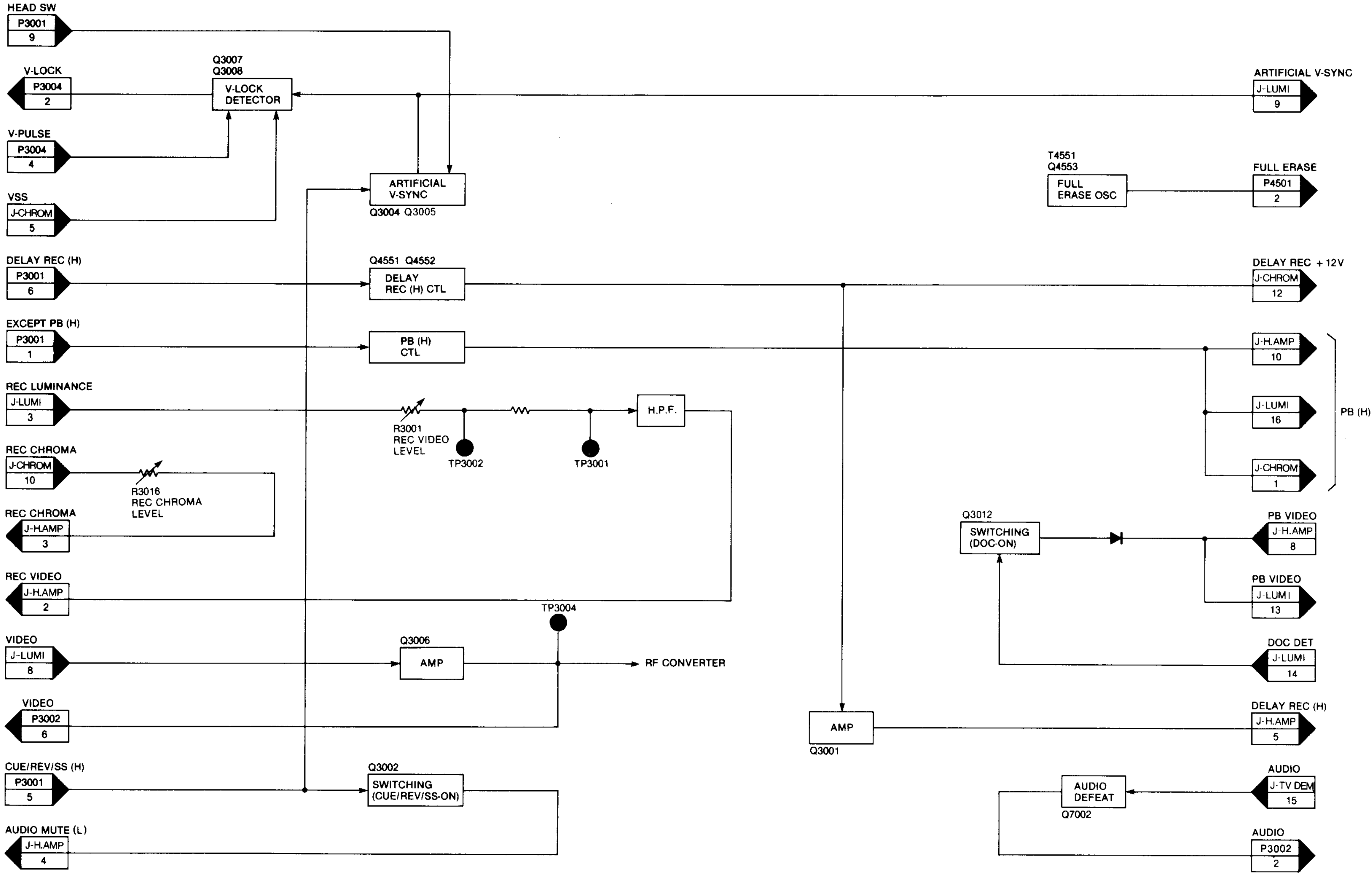

COMB
FILTER
R8113
TP8107
TP8106
TP8103
TP8102
TP8105
TP8104
GND3
R8109
320FH
VCO
3.58MHz
VXO
C8111


4 CUE/REVIEW /SS (H)
16 P.B. CHROMA
NCE C.B.A VJBS0806
PIN-(16) PLAY
0.1V/5msec. div.
9 PB CHROMA
10 REC CHROMA
IC8102
TP8107 PLAY
0.2V/20μsec. div.
9
14
4
4.5μSEC
MMV
6 HSS
5 HSS PULSE
SIGNAL PATH RECORD MODE
SIGNAL PATH PLAYBACK MODE
8 ROTARY SW
14 LP/SLP (H)
13 SLP (H)

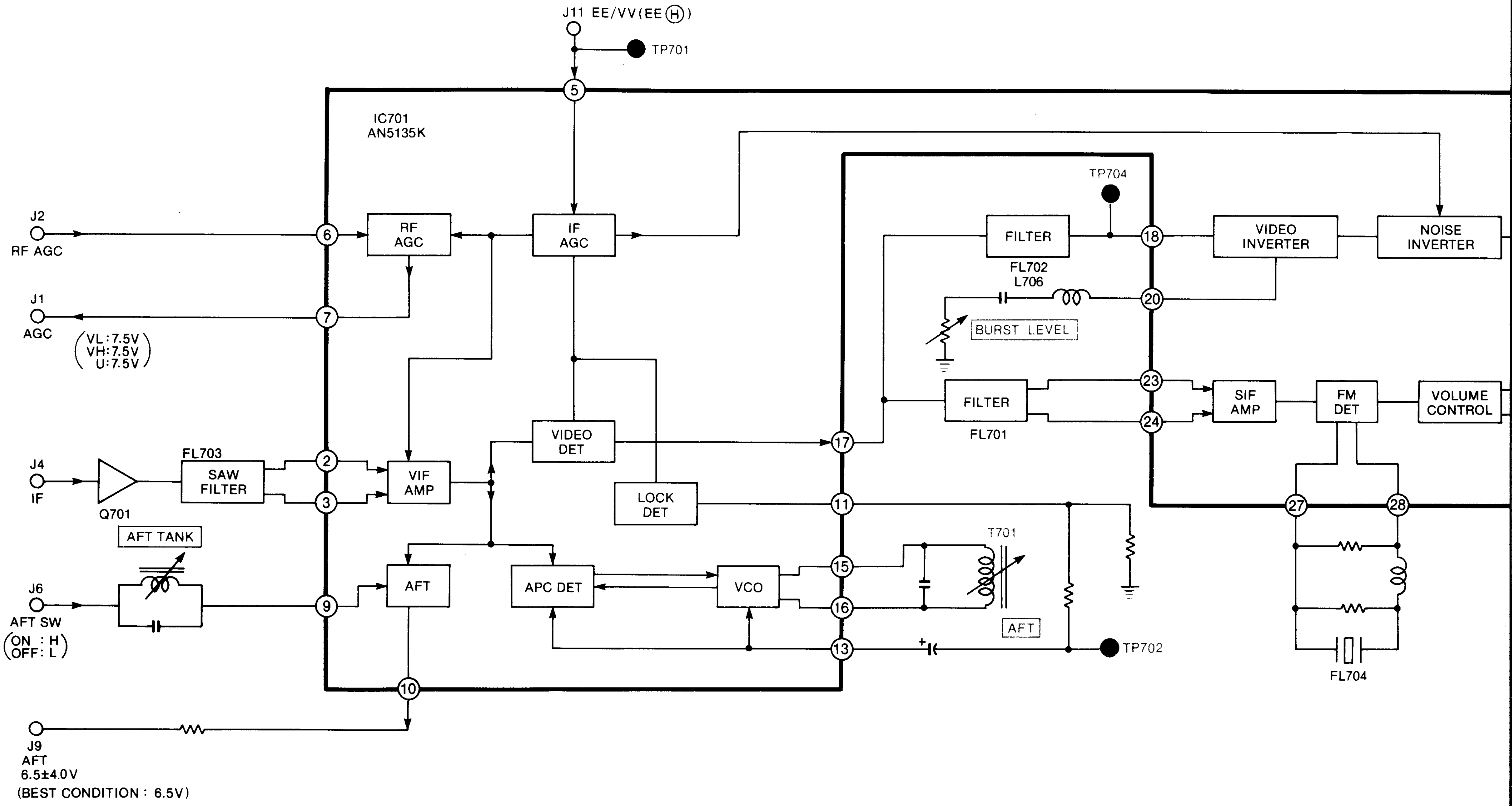
SIGNAL PROCESS BLOCK DIAGRAM

LOCATION OF TEST POINTS & ADJUSTMENT POINTS

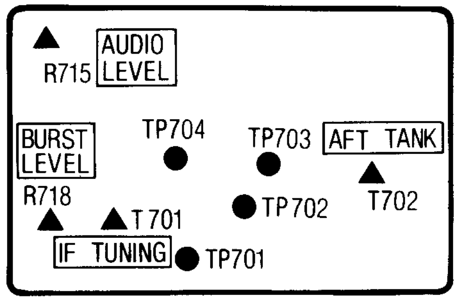

GND
LUMINANCE SIGNAL PROCESS
SECTION
TV DEMODULATOR
SIGNAL PROCESS SECTION
R3001
REC
VIDEO
LEVEL
TP3006
TP7001
TP7002
TP3001
TP3002
R3016
REC
CHROMA
LEVEL
TP3003
R7004
GND
RF
AGC
TP3004
TP3005
GND

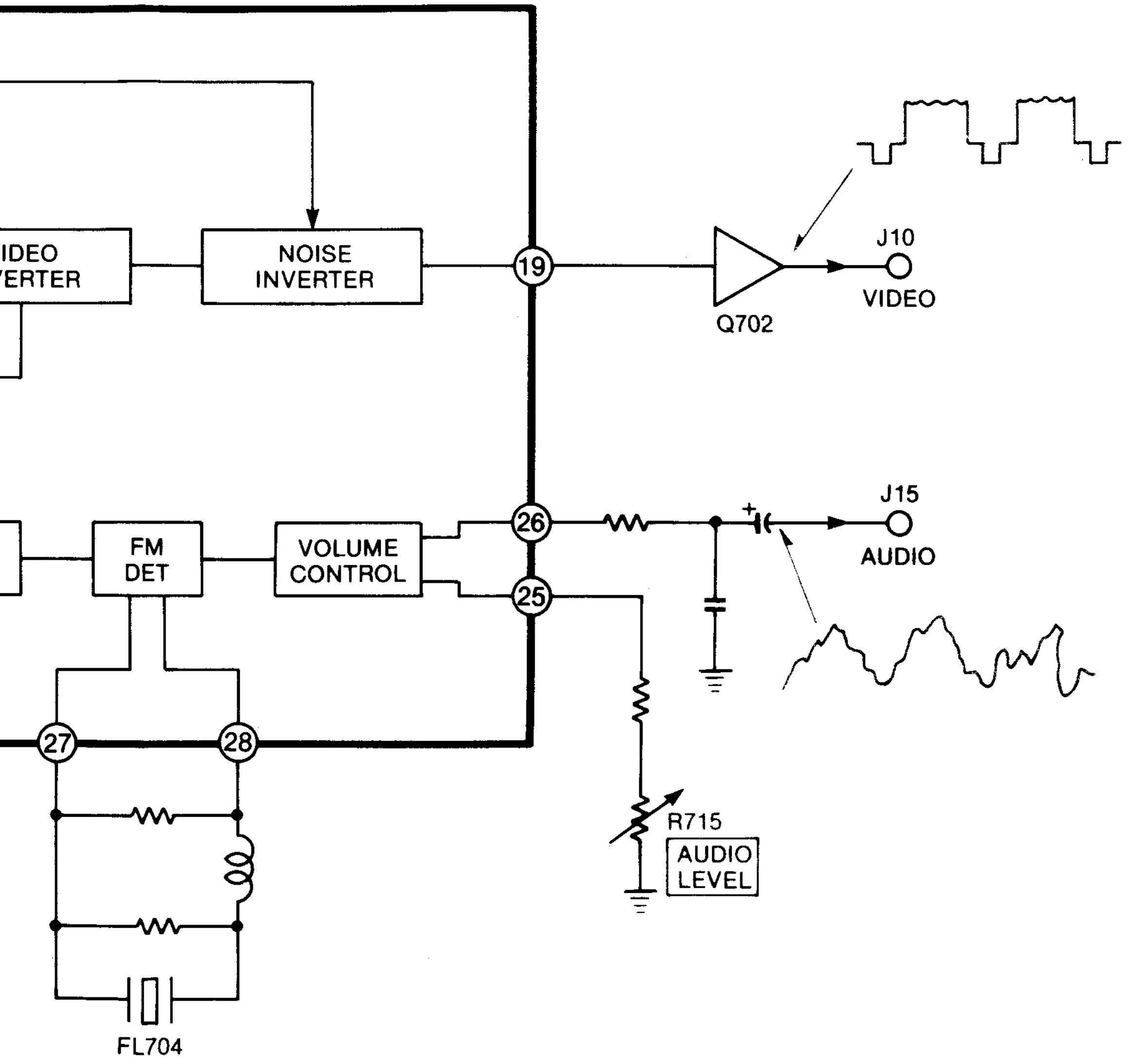

HEAD SW
P3001
9
V-LOCK
P3004
2
Q3007
Q3008
V-LOCK
DETECTOR
ARTIFICIAL V-SYNC
J-LUMI
9
V-PULSE
P3004
4
VSS
J-CHROM
5
ARTIFICIAL
V-SYNC
Q3004 Q3005
T4551
Q4553
FULL
ERASE OSC
FULL ERASE
P4501
2
DELAY REC (H)
P3001
6
Q4551 Q4552
DELAY
REC (H) CTL
DELAY REC + 12V
J-CHROM
12
EXCEPT PB (H)
P3001
1
PB (H)
CTL
J-H.AMP
10
REC LUMINANCE
J-LUMI
3
R3001
REC VIDEO
LEVEL
TP3002
TP3001
H.P.F.
J-LUMI
16
PB (H)
REC CHROMA
J-CHROM
10
R3016
REC CHROMA
LEVEL
J-CHROM
1
REC CHROMA
J-H.AMP
3
Q3012
SWITCHING
(DOC-ON)
PB VIDEO
J-H.AMP
8
REC VIDEO
J-H.AMP
2
PB VIDEO
J-LUMI
13
TP3004
VIDEO
J-LUMI
8
Q3006
AMP
RF CONVERTER
DOC DET
J-LUMI
14
VIDEO
P3002
6
AMP
Q3001
DELAY REC (H)
J-H.AMP
5
CUE/REV/SS (H)
P3001
5
Q3002
SWITCHING
(CUE/REV/SS-ON)
AUDIO
DEFEAT
Q7002
AUDIO
J-TV DEM
15
AUDIO MUTE (L)
J-H.AMP
4
AUDIO
P3002
2

TV DEMODULATOR BLOCK DIAGRAM

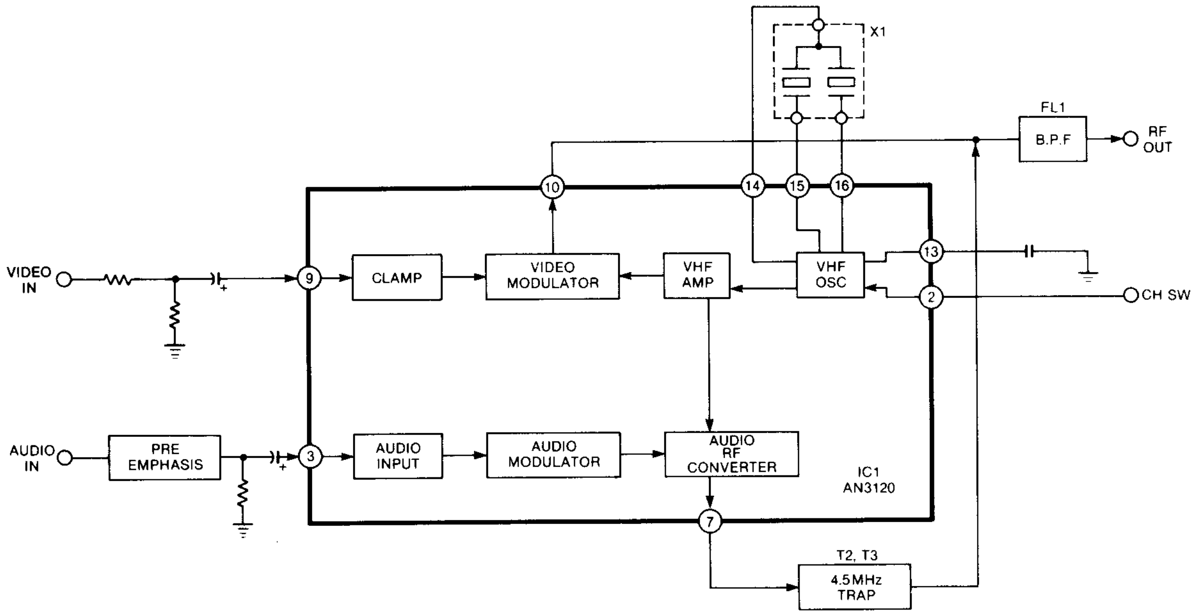

J11 EE/VV(EE Ⓗ)
TP701
5
IC701
AN5135K
J2
RF AGC
6
RF
AGC
IF
AGC
TP704
FILTER
18
VIDEO
INVERTER
NOISE
INVERTER
FL702
L706
20
BURST LEVEL
J1
AGC
7
(VL:7.5V
VH:7.5V
U:7.5V)
23
24
FILTER
FL701
SIF
AMP
FM
DET
VOLUME
CONTROL
VIDEO
DET
17
J4
IF
Q701
FL703
SAW
FILTER
2
3
VIF
AMP
LOCK
DET
11
27
28
AFT TANK
J6
AFT SW
(ON : H
OFF: L)
9
AFT
APC DET
VCO
15
16
T701
AFT
13
TP702
FL704
10
J9
AFT
6.5±4.0V
(BEST CONDITION : 6.5V)

LOCATION OF TEST POINTS & ADJUSTMENT POINTS

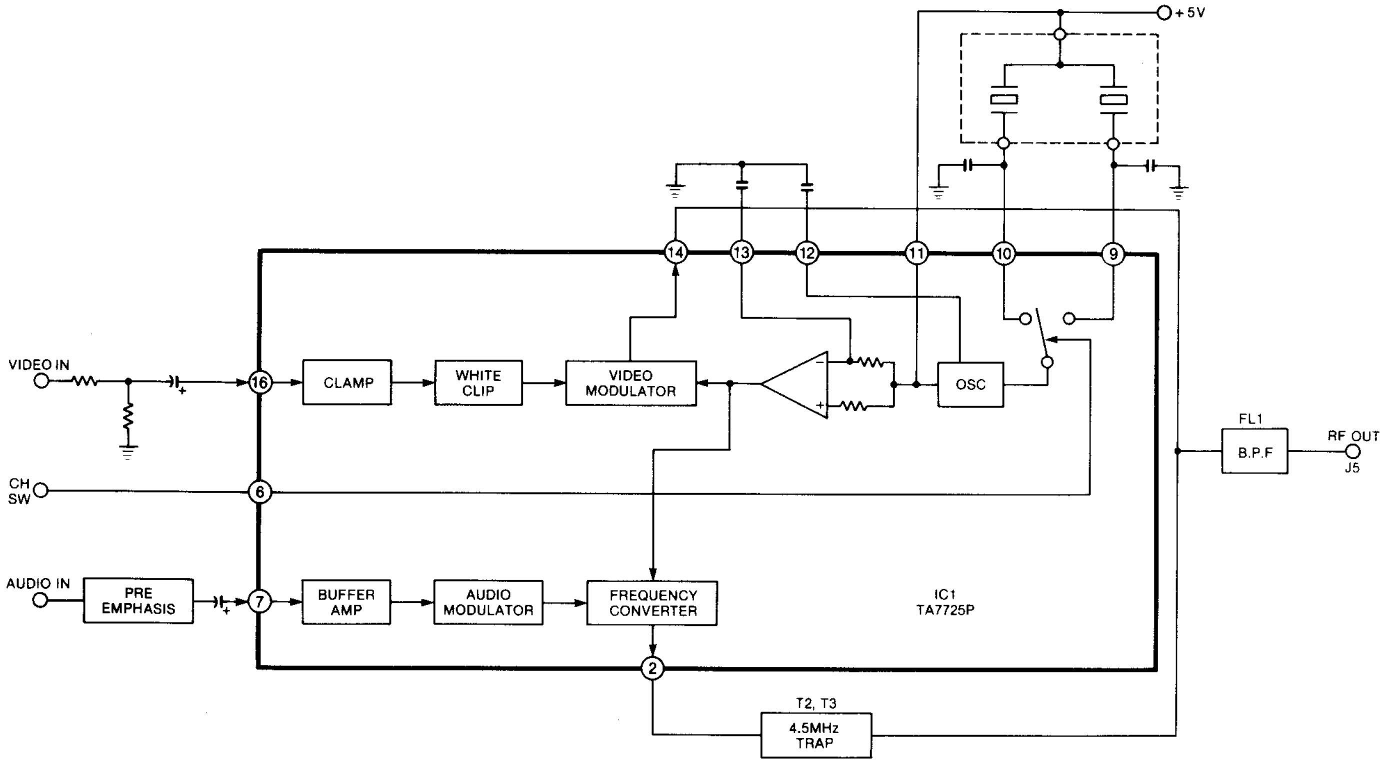

R715
AUDIO LEVEL
BURST LEVEL
R718
TP704
TP703
AFT TANK
T702
T701
TP702
IF TUNING
TP701


IDEO
VERTER
NOISE INVERTER
19
Q702
J10
VIDEO
FM DET
VOLUME CONTROL
26
25
27
28
J15
AUDIO
R715
AUDIO LEVEL
FL704

RF CONVERTER BLOCK DIAGRAM (VEQS0252/0253)

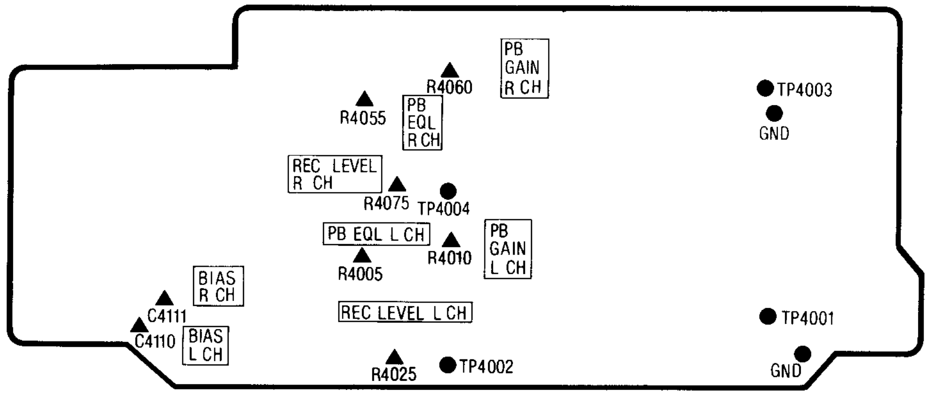

X1
FL1
B.P.F
RF OUT
10
14
15
16
VIDEO IN
9
CLAMP
VIDEO MODULATOR
VHF AMP
VHF OSC
13
2
CH SW
AUDIO IN
PRE EMPHASIS
3
AUDIO INPUT
AUDIO MODULATOR
AUDIO RF CONVERTER
IC1
AN3120
7
T2, T3
4.5MHz TRAP

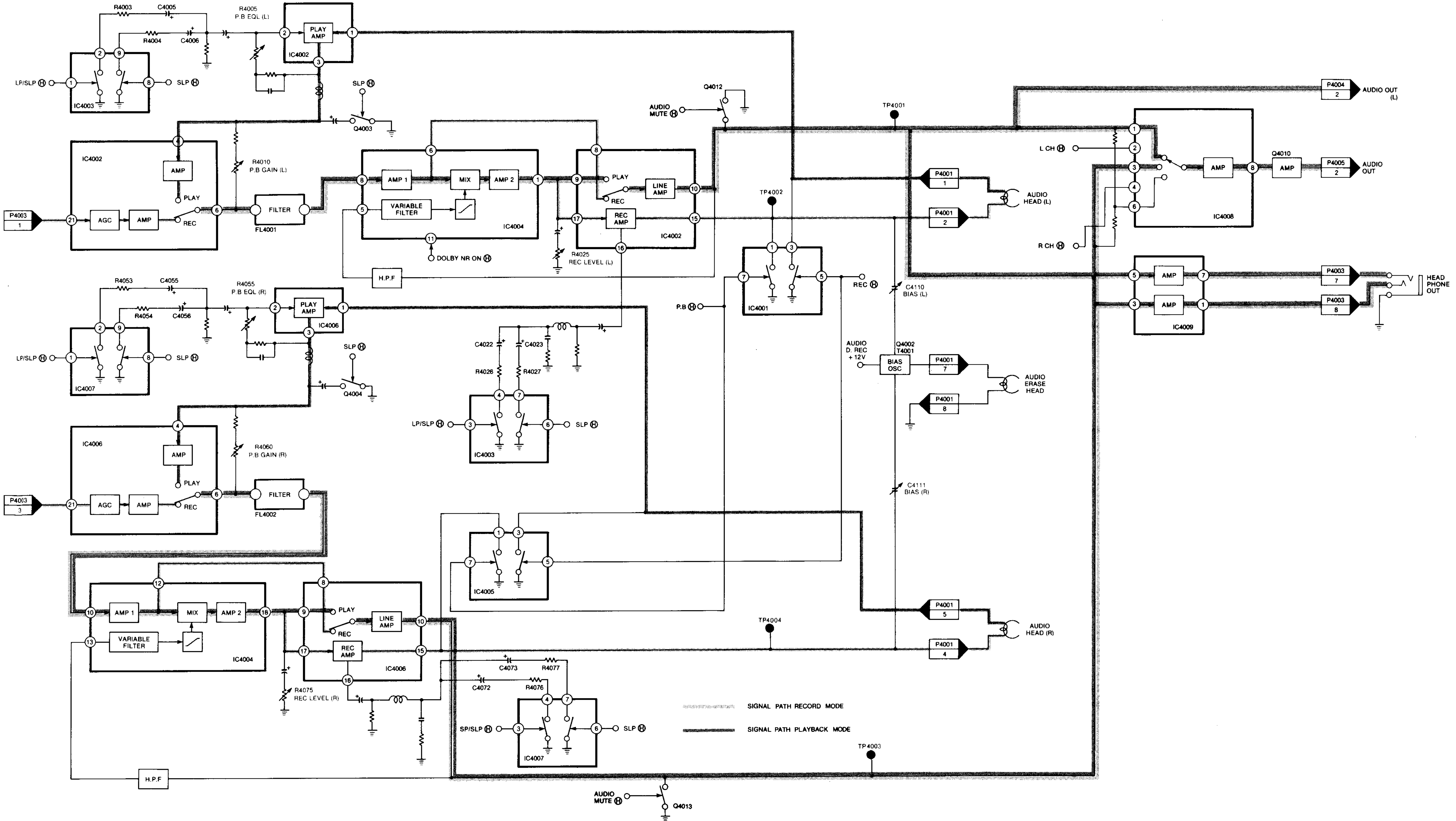
RF CONVERTER BLOCK DIAGRAM (VEQS0254/0255)


+5V
14
13
12
11
10
9
VIDEO IN
16
CLAMP
WHITE CLIP
VIDEO MODULATOR
OSC
FL1
B.P.F
RF OUT
J5
CH SW
6
AUDIO IN
PRE EMPHASIS
7
BUFFER AMP
AUDIO MODULATOR
FREQUENCY CONVERTER
IC1
TA7725P
2
T2, T3
4.5MHz TRAP

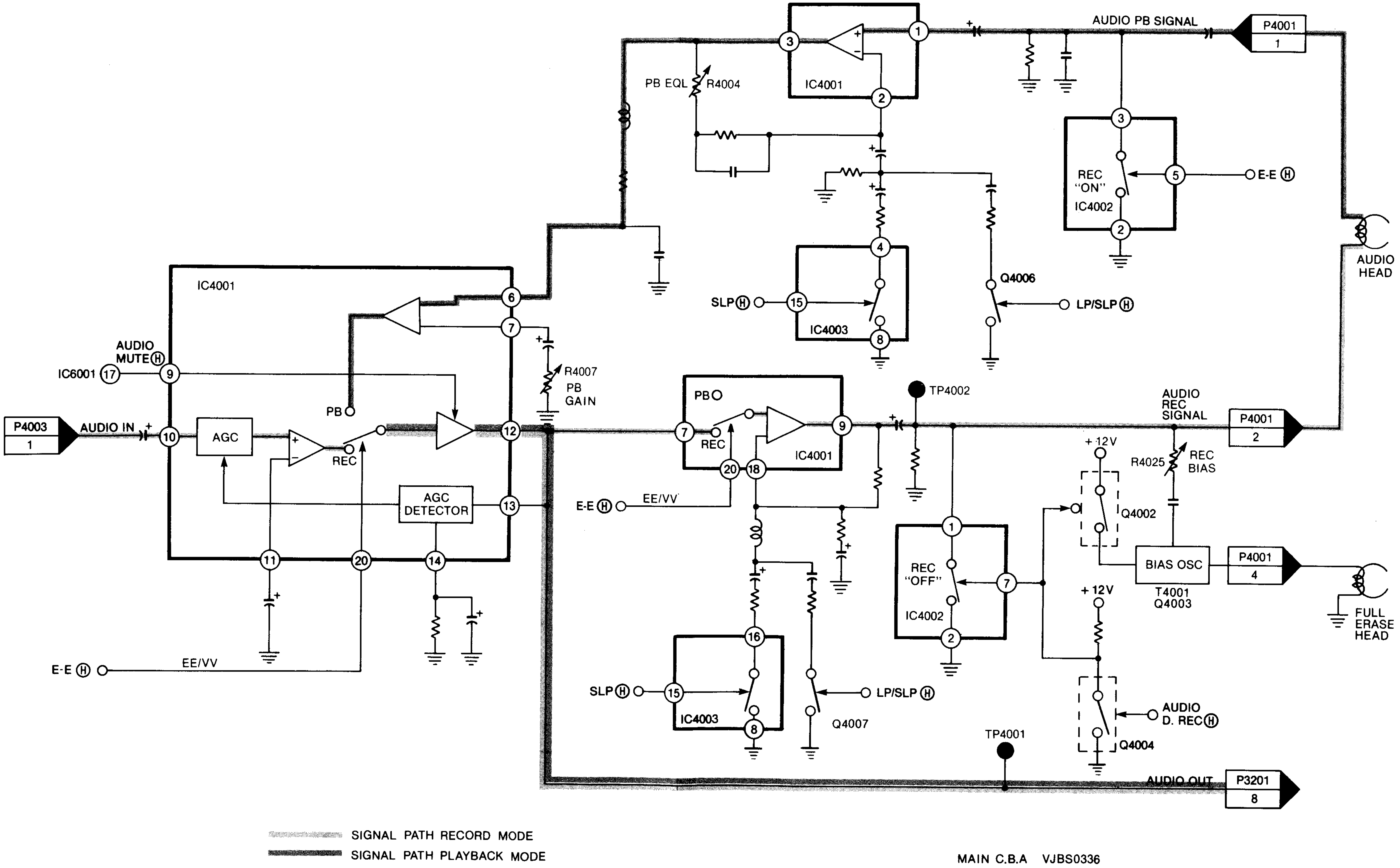
AUDIO BLOCK DIAGRAM FOR STEREO TYPE

LOCATION OF TEST POINTS & ADJUSTMENT POINTS


PB GAIN R CH
R4060
R4055
PB EQL R CH
TP4003
GND
REC LEVEL R CH
R4075
TP4004
PB EQL L CH
R4010
PB GAIN L CH
R4005
BIAS R CH
C4111
C4110
BIAS L CH
REC LEVEL L CH
R4025
TP4002
TP4001
GND


R4003
C4005
R4004
C4006
R4005 P.B EQL (L)
PLAY AMP
IC4002
LP/SLP Ⓗ
SLP Ⓗ
IC4003
SLP Ⓗ
Q4003
R4010 P.B GAIN (L)
IC4002
AMP
PLAY
REC
AGC
AMP
P4003 1
FILTER
FL4001
AMP 1
MIX
AMP 2
VARIABLE FILTER
IC4004
DOLBY NR ON Ⓗ
H.P.F
PLAY
REC
LINE AMP
REC AMP
IC4002
R4025 REC LEVEL (L)
AUDIO MUTE Ⓗ
Q4012
TP4001
TP4002
IC4001
REC Ⓗ
P.B Ⓗ
C4110 BIAS (L)
P4001 1
P4001 2
AUDIO HEAD (L)
L CH Ⓗ
R CH Ⓗ
AMP
IC4008
Q4010
AMP
P4004 2
AUDIO OUT (L)
P4005 2
AUDIO OUT
AMP
AMP
IC4009
P4003 7
P4003 8
HEAD PHONE OUT
R4053
C4055
R4054
C4056
R4055 P.B EQL (R)
PLAY AMP
IC4006
LP/SLP Ⓗ
SLP Ⓗ
IC4007
SLP Ⓗ
Q4004
C4022
C4023
R4026
R4027
LP/SLP Ⓗ
SLP Ⓗ
IC4003
AUDIO D. REC +12V
Q4002 T4001
BIAS OSC
P4001 7
P4001 8
AUDIO ERASE HEAD
IC4006
AMP
PLAY
REC
AGC
AMP
P4003 3
R4060 P.B GAIN (R)
FILTER
FL4002
C4111 BIAS (R)
IC4005
AMP 1
MIX
AMP 2
VARIABLE FILTER
IC4004
PLAY
REC
LINE AMP
REC AMP
IC4006
R4075 REC LEVEL (R)
TP4004
P4001 5
P4001 4
AUDIO HEAD (R)
C4073
R4077
C4072
R4076
SP/SLP Ⓗ
SLP Ⓗ
IC4007
SIGNAL PATH RECORD MODE
SIGNAL PATH PLAYBACK MODE
TP4003
H.P.F
AUDIO MUTE Ⓗ
Q4013

AUDIO BLOCK DIAGRAM FOR MONAURAL TYPE


AUDIO PB SIGNAL
P4001
1
3
1
2
IC4001
PB EQL
R4004
REC
"ON"
IC4002
5
E-E Ⓗ
AUDIO
HEAD
4
SLP Ⓗ
15
IC4003
8
Q4006
LP/SLP Ⓗ
IC4001
6
7
AUDIO
MUTE Ⓗ
IC6001
17
9
R4007
PB
GAIN
PB
P4003
1
AUDIO IN
10
AGC
REC
12
AGC
DETECTOR
13
11
20
14
E-E Ⓗ
EE/VV
PB
7
REC
20
18
IC4001
9
TP4002
AUDIO
REC
SIGNAL
P4001
2
+12V
R4025
REC
BIAS
Q4002
E-E Ⓗ
EE/VV
REC
"OFF"
IC4002
1
7
2
BIAS OSC
T4001
Q4003
P4001
4
FULL
ERASE
HEAD
+12V
16
SLP Ⓗ
15
IC4003
8
LP/SLP Ⓗ
Q4007
TP4001
AUDIO
D. REC Ⓗ
Q4004
AUDIO OUT
P3201
8
SIGNAL PATH RECORD MODE
SIGNAL PATH PLAYBACK MODE

MAIN C.B.A VJBS0336

ORDER NO. VRD-8404-569
B3

Service Manual

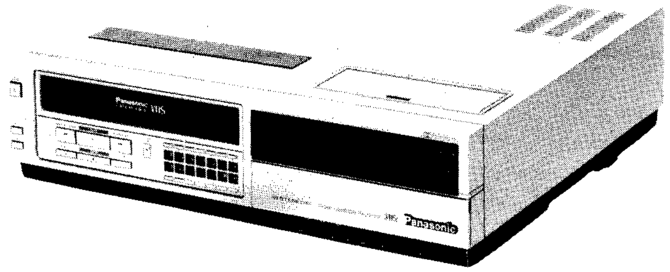
Video Cassette Recorder

Panasonic
Omnivision VHS

PV-1530
PV-1525

Vol. 4

Schematic Diagrams
Printed Circuit Board Diagrams



SPECIFICATIONS

Power Source:		120V AC ±10%, 60Hz ±0.5%
Power Consumption:		Approx. 22 watts
Television System:		EIA Standard (525 lines, 60 fields) NTSC color signal
Video Recording	System:	4 rotary heads, helical scanning system Luminance: FM azimuth recording Color signal: Converted subcarrier phase shift recording
Audio Track:		2 track (PV-1525: 1 track)
Tape Format:		Tape width 1/2″ (12.7mm), high density tape
Tape Speed:		SP mode: 1-5/16 i.p.s. (33.35mm/s) LP mode: 21/32 i.p.s. (16.67mm/s) SLP mode: 7/16 i.p.s. (11.12mm/s)
Record/Playback Time:		8 HRS. with 160 min. type tape used in SLP mode
FF/REW Time:		Less than 6 min. with 120 min. type tape
Heads:	Video:	4 rotary heads
	Audio/Control:	2 stationary head (PV-1525: 1 stationary head)
	Erase:	1 full track erase 1 audio track erase
Input Level:	Video:	VIDEO IN Jack (RCA type) 1.0Vp-p, 75Ω unbalanced
	Audio:	AUDIO IN Jack (RCA type) (Right, Left) −20dB, 50kΩ unbalanced MIC IN jack (M6) (Right, Left) −70dB, 4kΩ unbalanced PV-1525: MIC IN jack (M3) −70dB, 4kΩ unbalanced
	TV Tuners:	VHF Input: VHF Ch2-Ch13, cable channels "A" ~ "W", "A-2", "A-1" 75Ω unbalanced UHF Input: Ch14-Ch83, 300Ω balanced
Output Level:	Video:	VIDEO OUT Jack (RCA type) 1.0Vp-p, 75Ω unbalanced
	Audio:	AUDIO OUT Jack (RCA type) (Right, Left) −9dB, 1kΩ unbalanced PV-1525: −6dB, 600Ω unbalanced
	RF Modulated:	Ch3/Ch4 switchable, 72dBμ, (Open Voltage) 75Ω unbalanced
Video Horizontal	Resolution:	Color: more than 230 lines B/W: more than 230 lines
Audio Frequency (10dB down)	Response:	SP mode: 100Hz ~ 8kHz LP mode: 100Hz ~ 6kHz SLP mode: 150Hz ~ 5kHz
Signal-to-Noise Ratio:	Video:	SP mode: better than 41dB LP mode: better than 41dB SLP mode: better than 41dB (Rohde & Schwarz noise meter)
	Audio:	SP mode: better than 42dB LP mode: better than 40dB SLP mode: better than 40dB
Operation	Temperature:	41°F—104°F (5°C—40°C)
Operating Humidity:		10%—75%
Weight:		16.8 lbs. (7.6kg) PV-1525: 15.7 lbs. (7.1kg)
Dimensions:		16-15/16″(W)×14-5/16″(D)×4-1/4″(H) (430mm×364mm×108mm)
Accessories Supplied:		• Remote control unit (PV-1525) • Wireless Remote control unit (PV-1530) • VHF connecting cable • 300Ω—75Ω transformer • Twin-lead cable • V-Lock Tool
Available Tapes:		1/2″ VHS video cassette tapes NV-T160 Approx. 1073ft. (327m), 160, 320, or 480 min. NV-T120 Approx. 810ft. (247m), 120, 240, or 360 min. NV-T60 Approx. 417ft. (127m), 60, 120, or 180 min.

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic®

Matsushita Engineering & Service Company
Division of Matsushita Electric
Corporation of America
50 Meadowland Parkway, Secaucus,
New Jersey 07094

Panasonic Hawaii Inc.
91-238 Kauhi St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Matsushita Electric
of Canada Limited
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
Ave, 65 De Infanteria, KM 9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

CONTENTS

POWER SUPPLY CIRCUIT ········ 4- 1
OPERATION CIRCUIT ········ 4- 1
SERVO SCHEMATIC DIAGRAM(MAIN C.B.A.) ········ 4- 2
SUB AUDIO/SYSTEM CONTROL SCHEMATIC DIAGRAM(MAIN C.B.A.) PV-1530 ········ 4- 3
AUDIO/SYSTEM CONTROL SCHEMATIC DIAGRAM(MAIN C.B.A.) PV-1525 ········ 4- 4
IC6001 MATRIX CHART OF SYSTEM CONTROL CIRCUIT ········ 4- 5
VOLTAGE CHART OF MAIN C.B.A. ········ 4- 5
MAIN C.B.A. PV-1530 ········ 4- 6
MAIN C.B.A. PV-1525 ········ 4- 7
AUDIO SCHEMATIC DIAGRAM PV-1530 ········ 4- 8
AUDIO C.B.A. PV-1530 ········ 4- 9
SIGNAL PROCESS SCHEMATIC DIAGRAM ········ 4-10
SIGNAL PROCESS C.B.A. ········ 4-11
LUMINANCE CIRCUIT ········ 4-12
CHROMINANCE CIRCUIT ········ 4-13
HEAD AMP CIRCUIT ········ 4-14
TV DEMODULATOR CIRCUIT ········ 4-15
PROGRAMMABLE TIMER CIRCUIT ········ 4-16
CHANNEL SELECT CIRCUIT ········ 4-17
CAPSTAN MOTOR DRIVE CIRCUIT ········ 4-18
RF CONVERTER CIRCUIT (VEQS0252, VEQS0253) ········ 4-19
RF CONVERTER CIRCUIT (VEQS0254, VEQS0255) ········ 4-20
UHF/VHF TUNER CIRCUIT ········ 4-21
ANTENNA TERMINAL CIRCUIT ········ 4-22
IR RECEIVING DETECTOR CIRCUIT (VEQS0285, VEQS0293) PV-1530 ········ 4-22
IR WIRELESS TRANSMITTER CIRCUIT ········ 4-23
SENSOR LED C.B.A ········ 4-24
SUPPLY PHOTO TR C.B.A. ········ 4-24
CAPSTAN STATOR COIL ASS'Y ········ 4-24
AUDIO/CONTROL HEAD C.B.A.(VJBS00233)PV-1525 ········ 4-24
AUDIO/CONTROL HEAD C.B.A.(VJBS00242)PV-1525 ········ 4-24
REEL SENSOR C.B.A. ········ 4-24
CASSETTE LOADING MOTOR C.B.A. ········ 4-24
WIRED TRANSMITTER (7FUNCTION)UNIT PV-1525 ········ 4-24
CONNECTION C.B.A. ········ 4-24
CAPSTAN FG C.B.A.(VJBS00305) ········ 4-24
CAPSTAN FG C.B.A.(VJBS00306) ········ 4-24
INTERCONNECTION SCHEMATIC DIAGRAM PV-1530 ········ 4-25
INTERCONNECTION SCHEMATIC DIAGRAM PV-1525 ········ 4-26

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are shaded on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

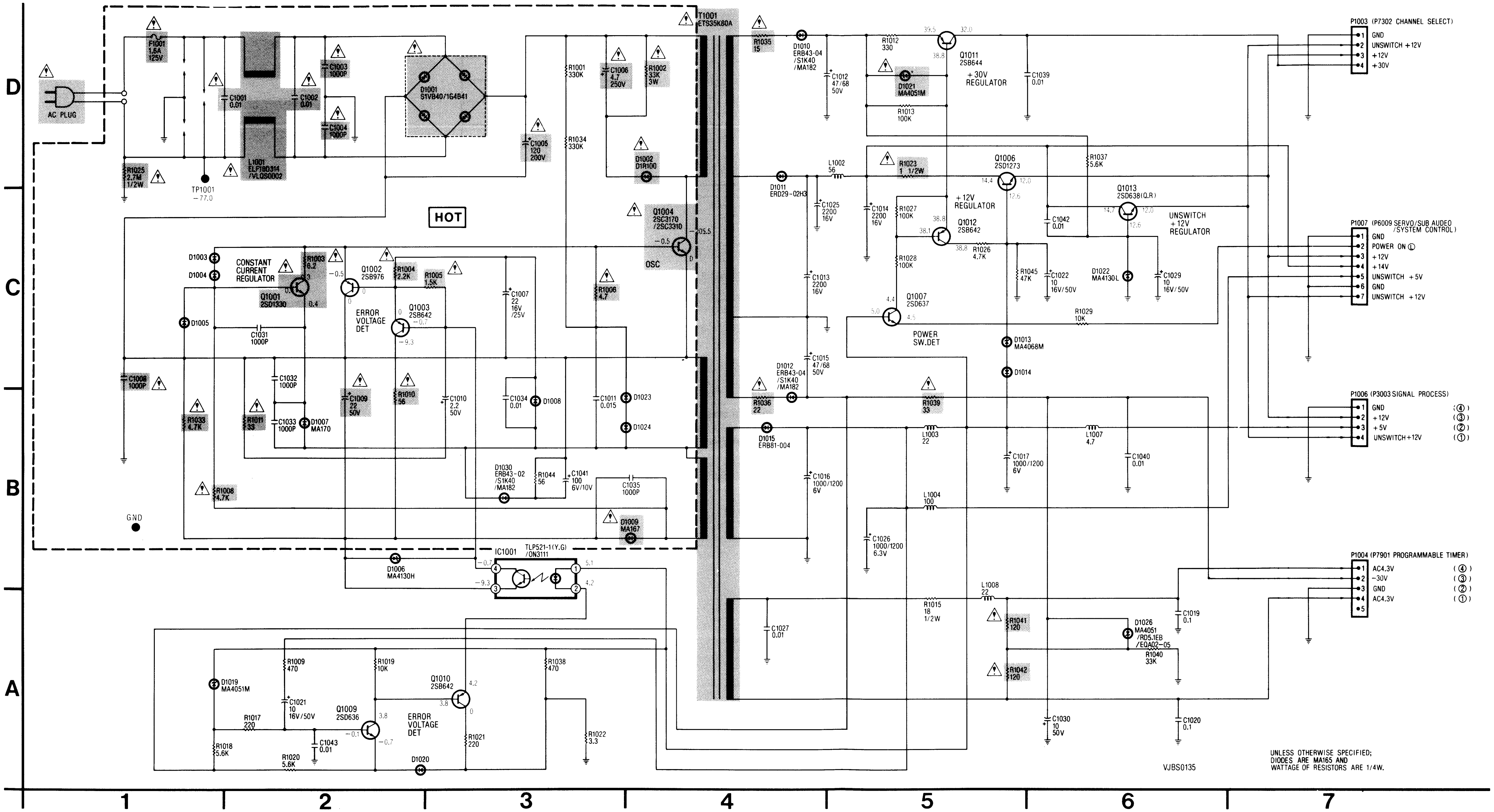
POWER SUPPLY SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN STOP MODE.

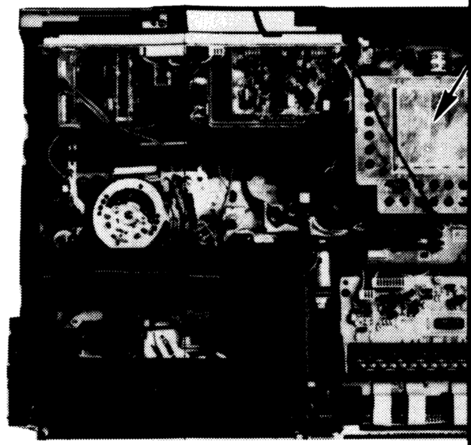
HOT CIRCUIT. BE CAREFUL AND USE A ISOLATION TRANSFORMER WHEN SERVICING.


AC PLUG
F1001 1.6A 125V
C1001 0.01
C1002 0.01
C1003 1000P
C1004 1000P
L1001 ELF18D314 /VLQS0002
D1001 S1VB40/1G4B41
R1025 2.7M 1/2W
TP1001 −77.0
C1005 120 200V
R1001 330K
R1034 330K
C1006 4.7 250V
R1002 33K 3W
D1002 D1R100
T1001 ETS35K80A
HOT
Q1004 2SC3170 /2SC3310
OSC
D1003
D1004
CONSTANT CURRENT REGULATOR
R1003 8.2
Q1001 2SD1330
Q1002 2SB976
R1004 2.2K
R1005 1.5K
Q1003 2SB642
ERROR VOLTAGE DET
C1007 22 16V /25V
R1006 4.7
D1005
C1031 1000P
C1008 1000P
C1032 1000P
R1033 4.7K
R1011 33
C1033 1000P
D1007 MA170
C1009 22 50V
R1010 56
C1010 2.2 50V
C1034 0.01
D1008
C1011 0.015
D1023
D1024
D1030 ERB43-02 /S1K40 /MA182
R1044 56
C1041 100 6V/10V
C1035 1000P
R1008 4.7K
GND
D1009 MA167
D1006 MA4130H
IC1001
TLP521-1(Y,G) /ON3111
D1019 MA4051M
R1009 470
R1019 10K
R1038 470
Q1010 2SB642
C1021 10 16V/50V
Q1009 2SD636
ERROR VOLTAGE DET
R1017 220
R1018 5.6K
R1020 5.6K
C1043 0.01
R1021 220
R1022 3.3
D1020
R1035 15
D1010 ERB43-04 /S1K40 /MA182
C1012 47/68 50V
R1012 330
Q1011 2SB644
+30V REGULATOR
C1039 0.01
D1021 MA4051M
R1013 100K
D1011 ERD29-02H3
L1002 56
C1025 2200 16V
C1014 2200 16V
R1027 100K
R1023 1 1/2W
+12V REGULATOR
Q1006 2SD1273
Q1012 2SB642
R1026 4.7K
R1037 5.6K
C1042 0.01
Q1013 2SD638(Q,R)
UNSWITCH +12V REGULATOR
R1028 100K
C1013 2200 16V
R1045 47K
C1022 10 16V/50V
D1022 MA4130L
C1029 10 16V/50V
Q1007 2SD637
POWER SW.DET
R1029 10K
D1013 MA4068M
D1014
D1012 ERB43-04 /S1K40 /MA182
C1015 47/68 50V
R1036 22
R1039 33
D1015 ERB81-004
L1003 22
L1007 4.7
C1040 0.01
C1017 1000/1200 6V
C1016 1000/1200 6V
L1004 100
C1026 1000/1200 6.3V
L1008 22
R1015 18 1/2W
C1027 0.01
R1041 120
R1042 120
D1026 MA4051 /RD5.1EB /EQA02-05
R1040 33K
C1019 0.1
C1030 10 50V
C1020 0.1
P1003 (P7302 CHANNEL SELECT)
GND
UNSWITCH +12V
+12V
+30V
P1007 (P6009 SERVO/SUB AUDEO /SYSTEM CONTROL)
GND
POWER ON Ⓛ
+12V
+14V
UNSWITCH +5V
GND
UNSWITCH +12V
P1006 (P3003 SIGNAL PROCESS)
GND
+12V
+5V
UNSWITCH+12V
P1004 (P7901 PROGRAMMABLE TIMER)
AC4.3V
−30V
GND
AC4.3V
D
C
B
A
1
2
3
4
5
6
7

UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165 AND
WATTAGE OF RESISTORS ARE 1/4W.

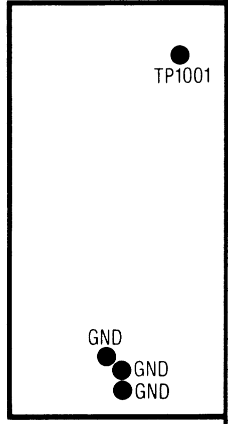
VJBS0135

POWER SUPPLY C.B.A



POWER SUPPLY SCHEMATIC DIAGRAM	
Q1001	2-C
Q1002	2-C
Q1003	2-C
Q1004	4-C
Q1006	5-D
Q1007	5-C
Q1009	2-A
Q1010	3-A
Q1011	5-D
Q1012	5-C
Q1013	6-C

LOCATION OF TES


TP1001
GND
GND
GND

P1007

1	GND
2	POWER ONⓁ
3	+12V
4	+14V
5	UNSWITCH +5V
6	GND
7	UNSWITCH +12V

P1006

1	GND
2	+12V
3	+5V
4	UNSWITCH +12V

P1003

1	GND
3	UNSWITCH +12V
3	+12V
4	+30V

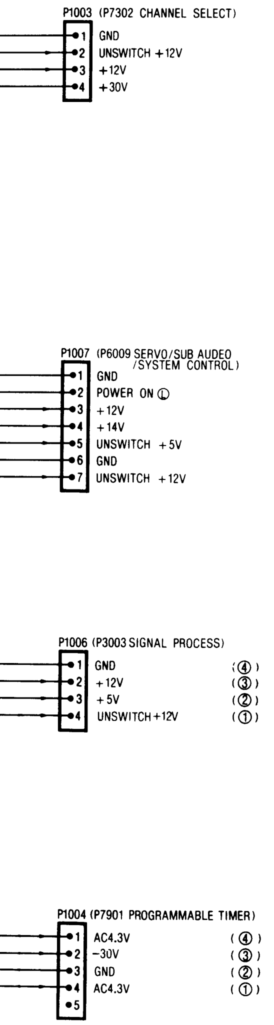
P1004

1	AC 4.3V
2	−30V
3	GND
4	AC 4.3V

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 1000 SERIES
SCHEMATIC DIAGRAM···R1002
(R1002 IS ABBREVIATED TO R2)

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

WIRING PLUGS INDICATE
HER SCHEMATIC DIAGRAM.


P1003 (P7302 CHANNEL SELECT)
1 GND
2 UNSWITCH +12V
3 +12V
4 +30V
P1007 (P6009 SERVO/SUB AUDEO /SYSTEM CONTROL)
1 GND
2 POWER ON Ⓛ
3 +12V
4 +14V
5 UNSWITCH +5V
6 GND
7 UNSWITCH +12V
P1006 (P3003 SIGNAL PROCESS)
1 GND (④)
2 +12V (③)
3 +5V (②)
4 UNSWITCH+12V (①)
P1004 (P7901 PROGRAMMABLE TIMER)
1 AC4.3V (④)
2 -30V (③)
3 GND (②)
4 AC4.3V (①)
5

WISE SPECIFIED;
A165 AND
ESISTORS ARE 1/4W.

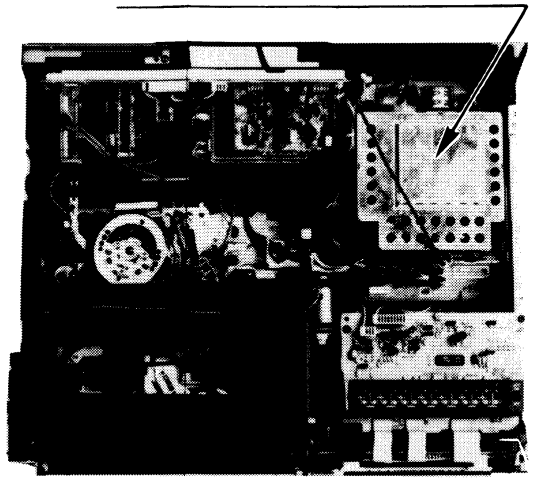
7

ONDUCTOR DEVICES ARE
UIRE THE SPECIAL
CTROSTATICALLY SENSITIVE

POWER SUPPLY C.B.A. VEPS0135E2 (PV-1530)
VEPS0135F1 (PV-1525)

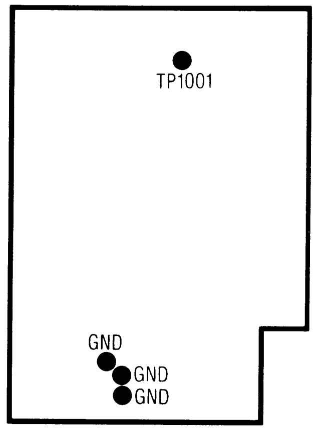
IMPORTANT SEFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

POWER SUPPLY C.B.A.



POWER SUPPLY SCHEMATIC DIAGRAM	
Q1001	2-C
Q1002	2-C
Q1003	2-C
Q1004	4-C
Q1006	5-D
Q1007	5-C
Q1009	2-A
Q1010	3-A
Q1011	5-D
Q1012	5-C
Q1013	6-C

LOCATION OF TEST POINTS


TP1001
GND
GND
GND

P1007

1	GND
2	POWER ONⓁ
3	+12V
4	+14V
5	UNSWITCH +5V
6	GND
7	UNSWITCH +12V

P1006

1	GND
2	+12V
3	+5V
4	UNSWITCH +12V

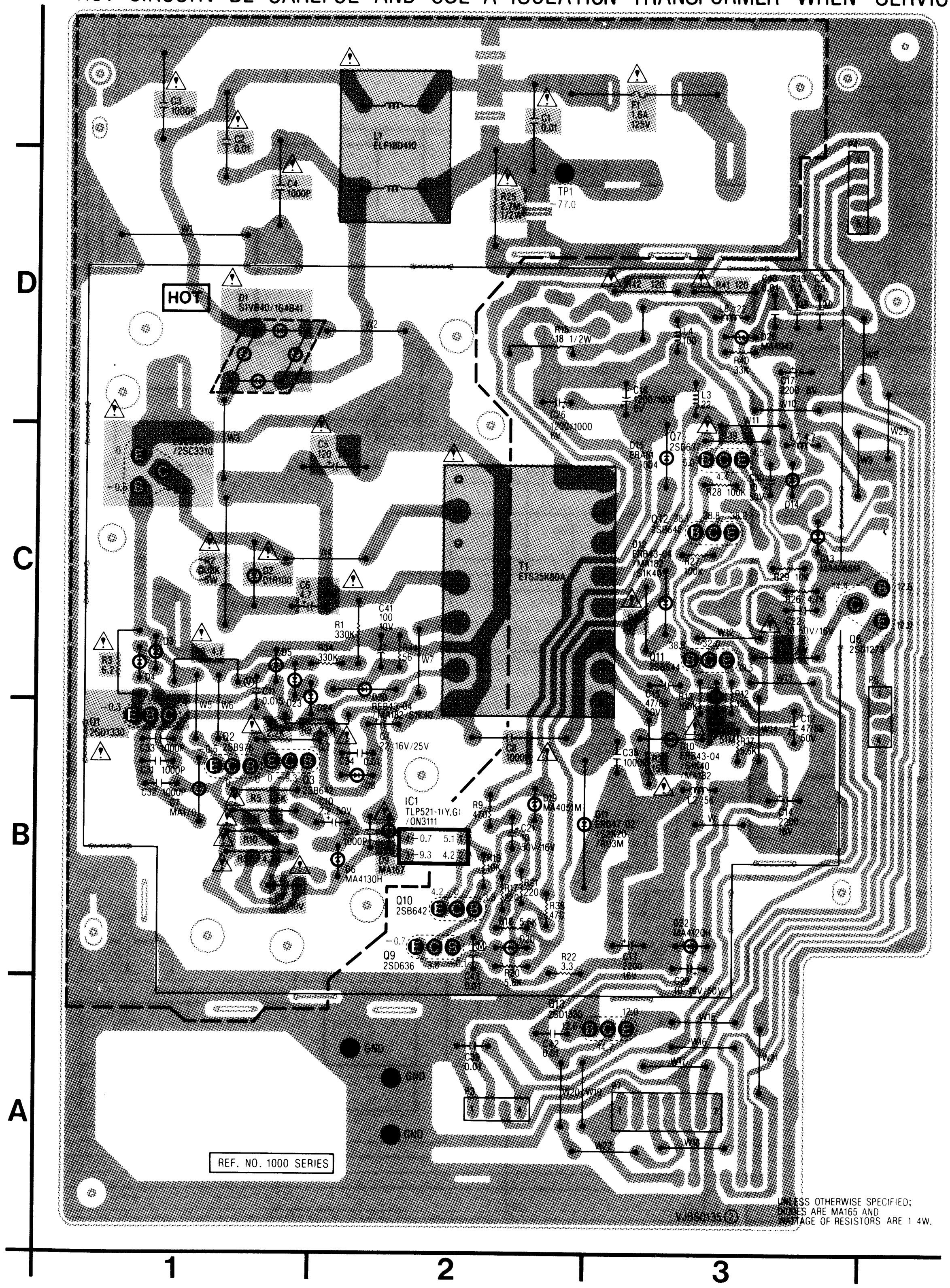
P1003

1	GND
3	UNSWITCH +12V
3	+12V
4	+30V

P1004

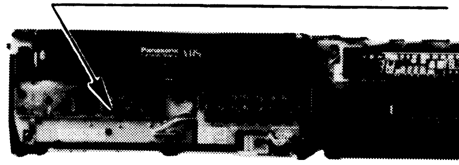
1	AC 4.3V
2	-30V
3	GND
4	AC 4.3V

HOT CIRCUIT. BE CAREFUL AND USE A ISOLATION TRANSFORMER WHEN SERVICING.


D
C
B
A
1
2
3
HOT
L1 ELF18D410
F1 1.6A 125V
C1 0.01
C2 0.01
C3 1000P
C4 1000P
R25 2.7M 1/2W
TP1
D1 S1VB40/1G4B41
T1 ETS35K80A
IC1 TLP521-1(Y,G) /ON3111
Q1 2SD1330
Q9 2SD636
Q10 2SB642
GND
GND
GND
REF. NO. 1000 SERIES
VJBS0135 ②

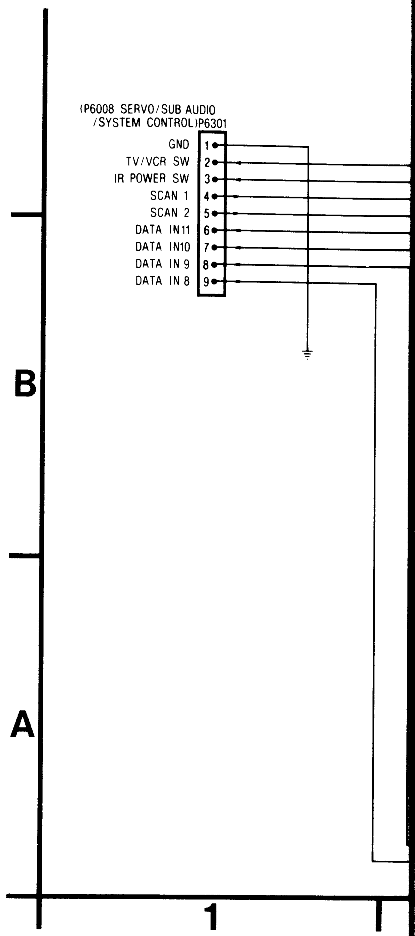
UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165 AND
WATTAGE OF RESISTORS ARE 1 4W.

OPERATION C.B.A.

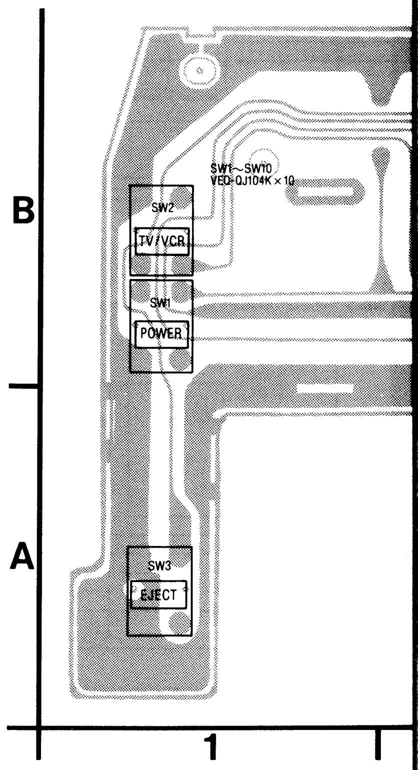


POWER SUPPLY C.B.A.	
Q 1	1-B
Q 2	1-B
Q 3	1-B
Q 4	1-C
Q 6	4-C
Q 7	3-C
Q 9	2-B
Q10	2-B
Q11	3-C
Q12	3-C
Q13	3-A

OPERATION SCH


(P6008 SERVO/SUB AUDIO /SYSTEM CONTROL)P6301
GND 1
TV/VCR SW 2
IR POWER SW 3
SCAN 1 4
SCAN 2 5
DATA IN11 6
DATA IN10 7
DATA IN 9 8
DATA IN 8 9
B
A
1

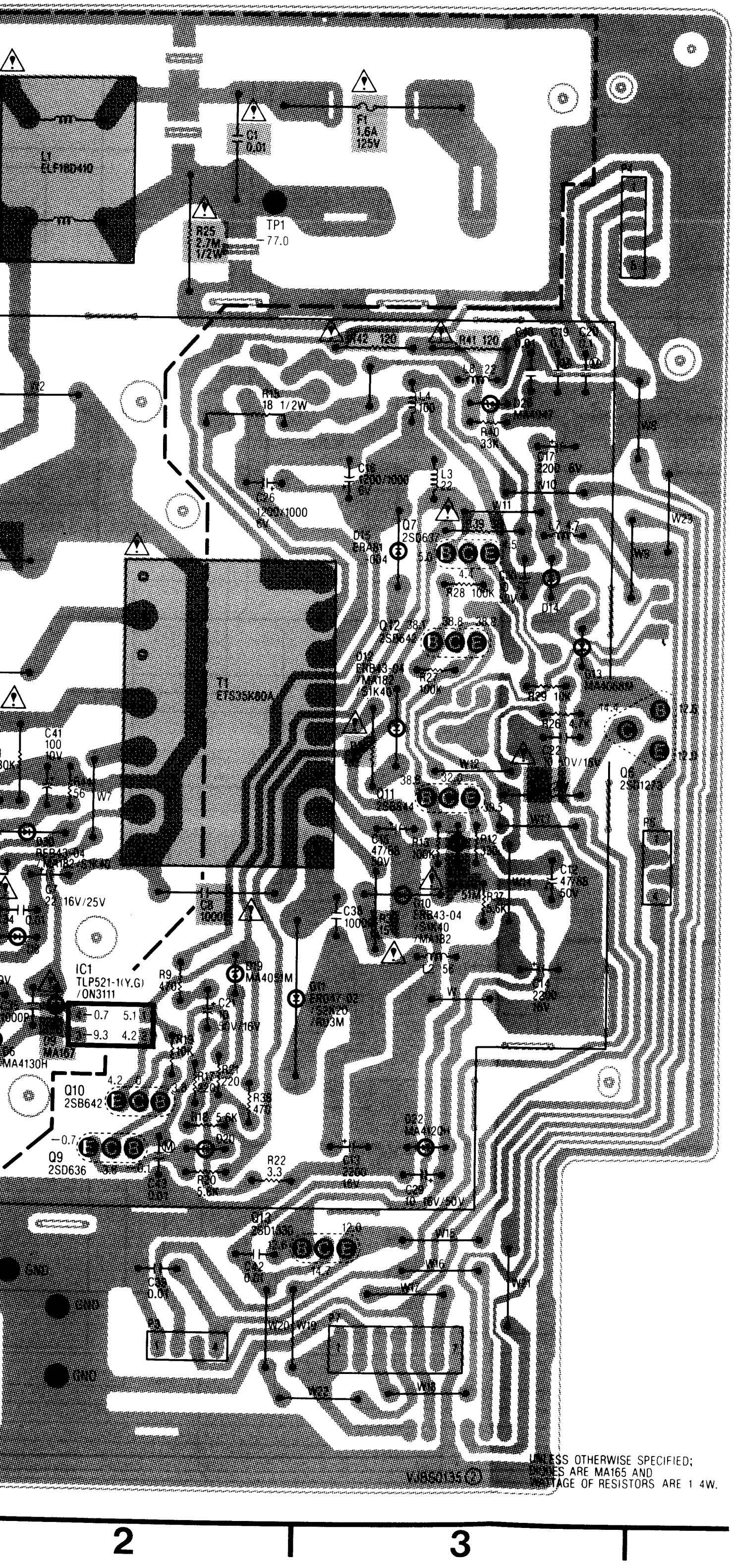
OPERATION C.B.


SW1~SW10 VEQ-QJ104K×10
SW2
TV/VCR
SW1
POWER
SW3
EJECT
B
A
1

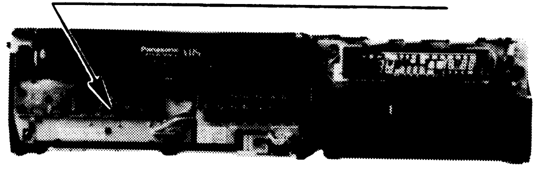
C.B.A. VEPS0135E2 (PV-1530)
VEPS0135F1 (PV-1525)

IMPORTANT SEFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

UL AND USE A ISOLATION TRANSFORMER WHEN SERVICING.


L1
ELF18D410
C1
0.01
F1
1.6A
125V
R25
2.7M
1/2W
TP1
77.0
T1
ETS35K80A
IC1
TLP521-1(Y,G)
/ON3111
Q10
2SB642
Q9
2SD636
GND
GND
VJBS0135②
UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165 AND
WATTAGE OF RESISTORS ARE 1/4W.
2
3

OPERATION C.B.A.



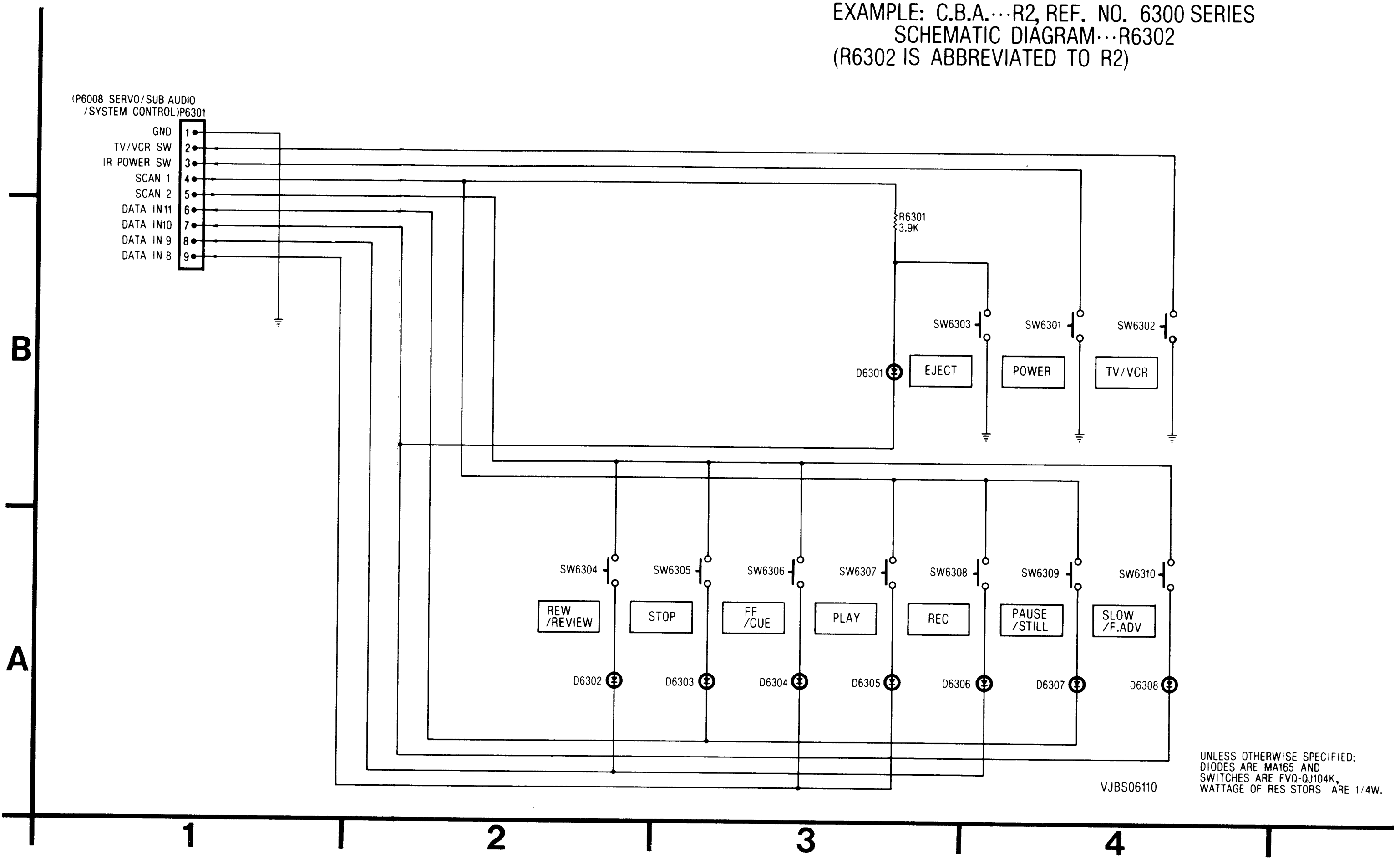
POWER SUPPLY C.B.A.	
Q 1	1-B
Q 2	1-B
Q 3	1-B
Q 4	1-C
Q 6	4-C
Q 7	3-C
Q 9	2-B
Q10	2-B
Q11	3-C
Q12	3-C
Q13	3-A

OPERATION SCHEMATIC DIAGRAM

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

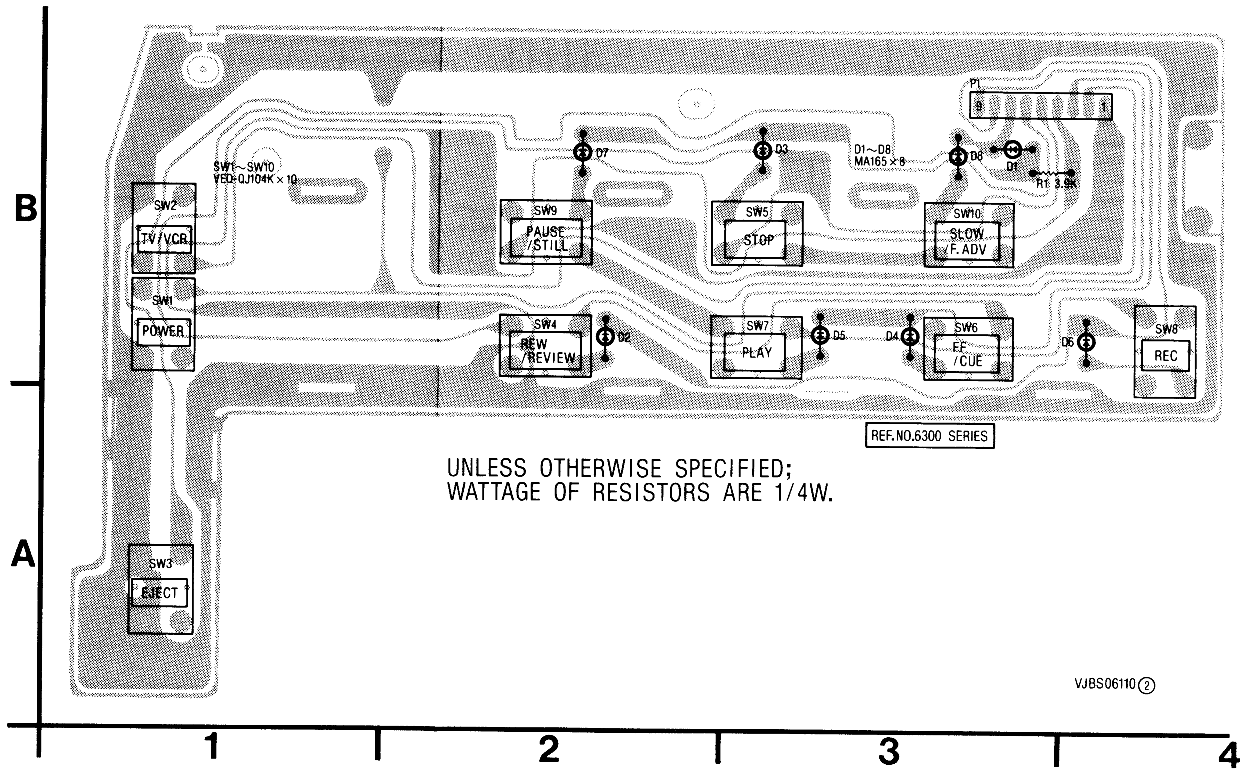
4-1
POWER SUPPLY CIRCUIT
OPERATION CIRCUIT

NOTE: REF. NO. ON. C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 6300 SERIES
SCHEMATIC DIAGRAM···R6302
(R6302 IS ABBREVIATED TO R2)


(P6008 SERVO/SUB AUDIO
/SYSTEM CONTROL)P6301
GND 1
TV/VCR SW 2
IR POWER SW 3
SCAN 1 4
SCAN 2 5
DATA IN11 6
DATA IN10 7
DATA IN 9 8
DATA IN 8 9
R6301
3.9K
SW6303
SW6301
SW6302
D6301
EJECT
POWER
TV/VCR
SW6304
SW6305
SW6306
SW6307
SW6308
SW6309
SW6310
REW
/REVIEW
STOP
FF
/CUE
PLAY
REC
PAUSE
/STILL
SLOW
/F.ADV
D6302
D6303
D6304
D6305
D6306
D6307
D6308
UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165 AND
SWITCHES ARE EVQ-QJ104K,
WATTAGE OF RESISTORS ARE 1/4W.
VJBS06110
B
A
1
2
3
4

OPERATION C.B.A. VEPS06110A1

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN SP REC MODE.


P1
9
1
D7
D3
D1~D8
MA165×8
D8
Q1
R1 3.9K
SW1~SW10
VEQ-QJ104K×10
SW2
TV/VCR
SW9
PAUSE
/STILL
SW5
STOP
SW10
SLOW
/F.ADV
SW1
POWER
SW4
REW
/REVIEW
D2
SW7
PLAY
D5
D4
SW6
FF
/CUE
D6
SW8
REC
SW3
EJECT
REF.NO.6300 SERIES
VJBS06110②
B
A
1
2
3
4

UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS ARE 1/4W.

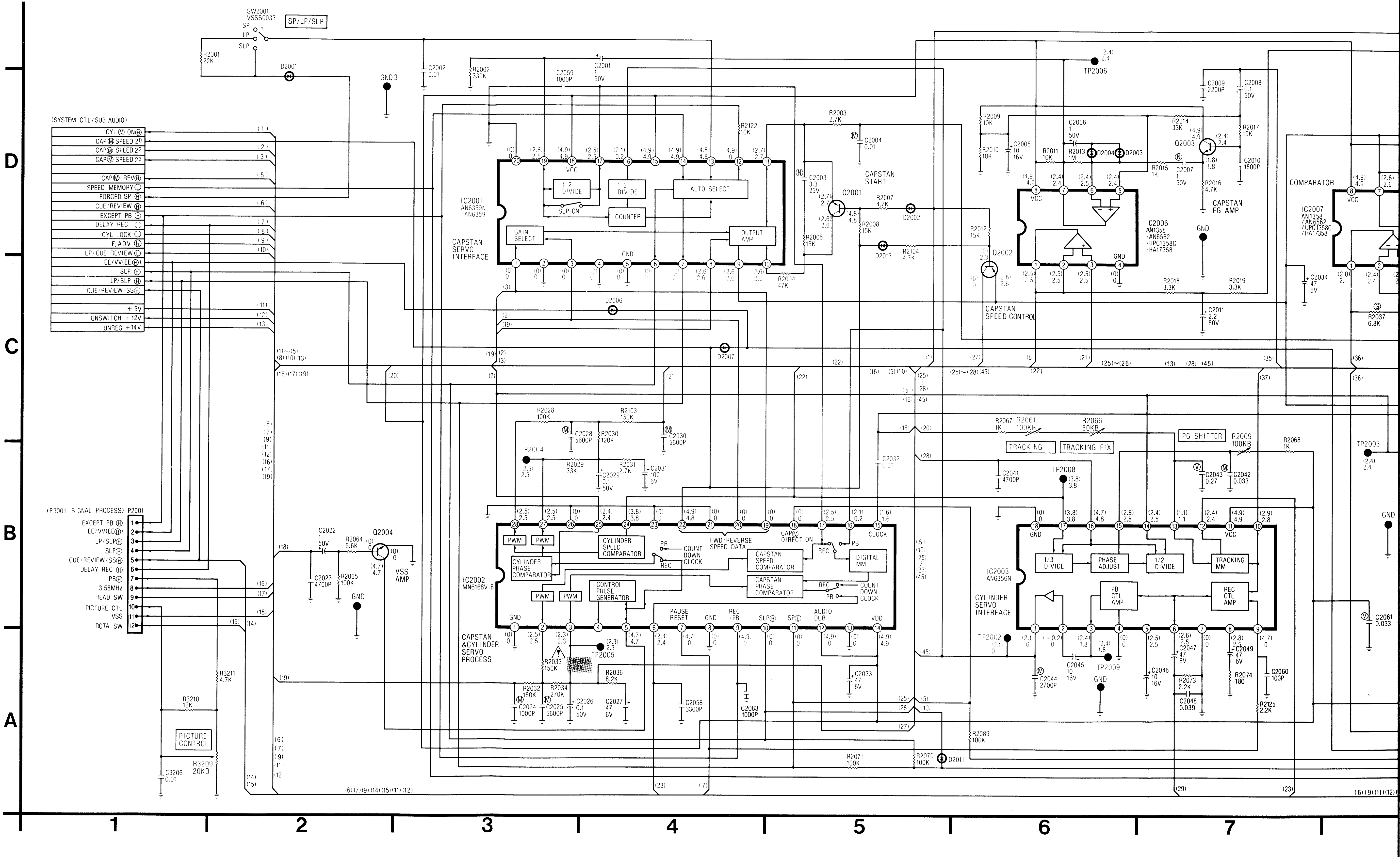
P6301

1	GND
2	TV/VCR SW
3	IR POWER SW
4	SCAN 1
5	SCAN 2
6	DATA IN11
7	DATA IN10
8	DATA IN 9
9	DATA IN 8

4-2
SERVO
SCHEMATIC DIAGRAM (MAIN C.B.A.

MAIN SCHEMATIC DIAGRAM (SERVO SECTION)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

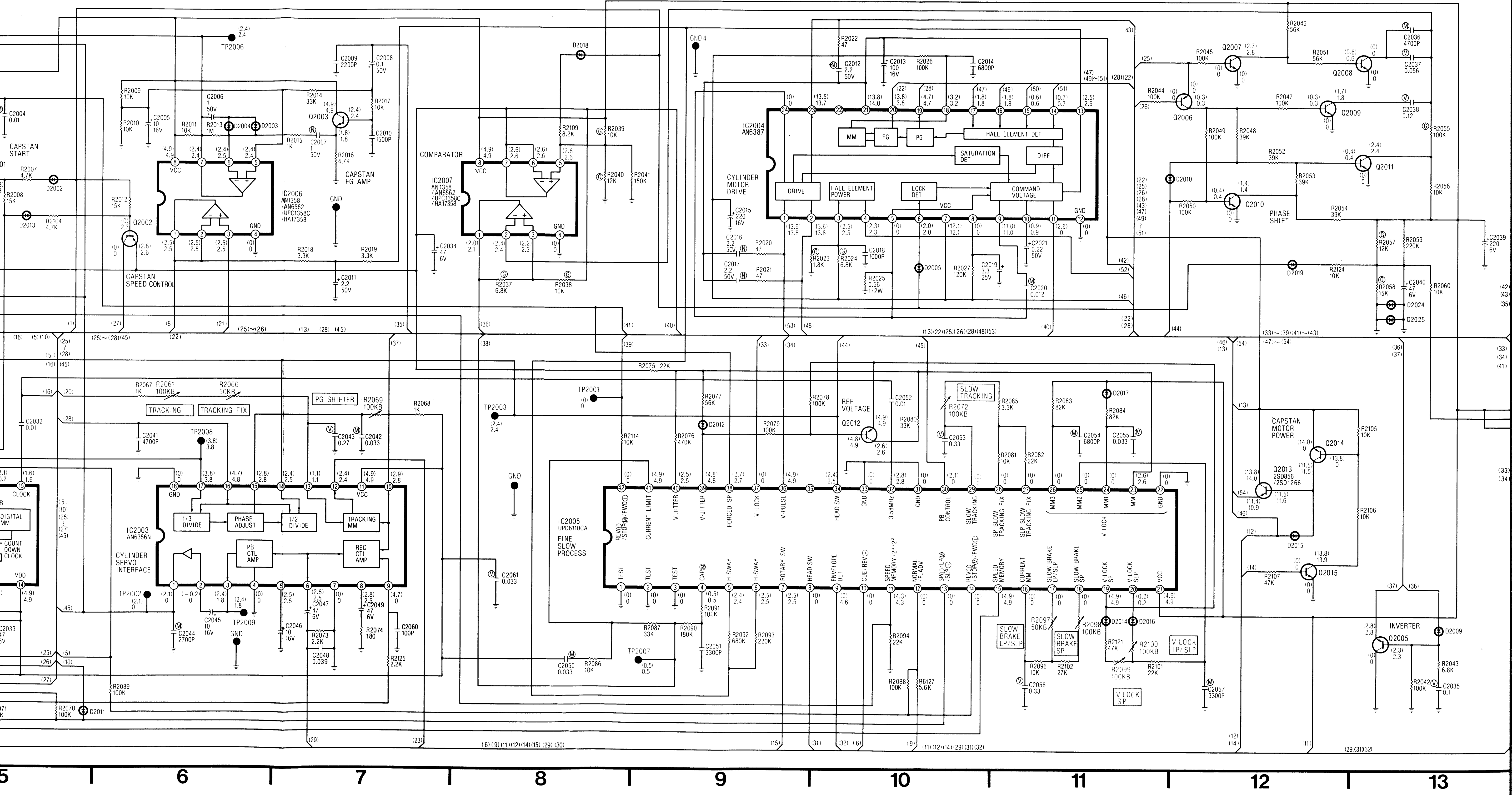

SW2001 VSSS0033
SP
LP
SLP
SP/LP/SLP
R2001 22K
D2001
GND3
C2002 0.01
R2002 330K
C2059 1000P
C2001 1 50V
(SYSTEM CTL/SUB AUDIO)
CYL Ⓜ ON Ⓗ
CAP Ⓜ SPEED 2⁰
CAP Ⓜ SPEED 2²
CAP Ⓜ SPEED 2³
CAP Ⓜ REV Ⓗ
SPEED MEMORY Ⓛ
FORCED SP Ⓗ
CUE/REVIEW Ⓗ
EXCEPT PB Ⓗ
DELAY REC Ⓗ
CYL LOCK Ⓛ
F.ADV Ⓗ
LP/CUE REVIEW Ⓛ
EE/VVIEE Ⓗ
SLP Ⓗ
LP/SLP Ⓗ
CUE/REVIEW/SS Ⓗ
+5V
UNSWITCH +12V
UNREG +14V
IC2001 AN6359N AN6359
CAPSTAN SERVO INTERFACE
VCC
1/2 DIVIDE
1/3 DIVIDE
AUTO SELECT
SLP-ON
COUNTER
GAIN SELECT
OUTPUT AMP
GND
R2122 10K
R2003 2.7K
C2004 0.01
C2003 3.3 25V
Q2001
CAPSTAN START
R2007 4.7K
D2002
R2008 15K
R2006 15K
D2013
R2104 4.7K
R2004 47K
D2006
D2007
R2012 15K
Q2002
CAPSTAN SPEED CONTROL
TP2006
C2009 2200P
C2008 0.1 50V
R2009 10K
C2006 1 50V
R2014 33K
Q2003
R2017 10K
R2010 10K
C2005 10 16V
R2011 10K
R2013 1M
D2004
D2003
R2015 1K
C2007 1 50V
R2016 4.7K
C2010 1500P
CAPSTAN FG AMP
IC2006 AN1358 /AN6562 /UPC1358C /HA17358
GND
R2018 3.3K
R2019 3.3K
C2011 2.2 50V
COMPARATOR
IC2007 AN1358 /AN6562 /UPC1358C /HA17358
C2034 47 6V
R2037 6.8K
R2028 100K
R2103 150K
C2028 5600P
R2030 120K
C2030 5600P
TP2004
R2029 33K
R2031 2.7K
C2029 0.1 50V
C2031 100 6V
(P3001 SIGNAL PROCESS) P2001
EXCEPT PB Ⓗ
EE/VVIEE Ⓗ
LP/SLP Ⓗ
SLP Ⓗ
CUE/REVIEW/SS Ⓗ
DELAY REC Ⓗ
PB Ⓗ
3.58MHz
HEAD SW
PICTURE CTL
VSS
ROTA SW
C2022 1 50V
R2064 5.6K
Q2004
VSS AMP
C2023 4700P
R2065 100K
GND
IC2002 MN6168VIB
PWM
CYLINDER SPEED COMPARATOR
CYLINDER PHASE COMPARATOR
PB
REC
COUNT DOWN CLOCK
FWD/REVERSE SPEED DATA
CAP Ⓜ DIRECTION
CAPSTAN SPEED COMPARATOR
DIGITAL MM
CONTROL PULSE GENERATOR
CAPSTAN PHASE COMPARATOR
CLOCK
GND
PAUSE RESET
REC/PB
SLP Ⓗ
SP Ⓛ
AUDIO DUB
VDD
CAPSTAN &CYLINDER SERVO PROCESS
TP2005
R2033 150K
R2035 47K
R2036 8.2K
R2032 150K
R2034 270K
C2024 1000P
C2025 5600P
C2026 0.1 50V
C2027 47 6V
C2058 3300P
C2063 1000P
C2033 47 6V
R3211 4.7K
R3210 12K
PICTURE CONTROL
R3209 20KB
C3206 0.01
C2032 0.01
R2067 1K
R2061 100KB
R2066 50KB
TRACKING
TRACKING FIX
PG SHIFTER
R2069 100KB
R2068 1K
C2041 4700P
TP2008
C2043 0.27
C2042 0.033
TP2003
IC2003 AN6356N
CYLINDER SERVO INTERFACE
1/3 DIVIDE
PHASE ADJUST
1/2 DIVIDE
TRACKING MM
PB CTL AMP
REC CTL AMP
TP2002
C2044 2700P
C2045 10 16V
TP2009
C2046 10 16V
C2047 47 6V
R2073 2.2K
C2048 0.039
C2049 47 6V
R2074 180
C2060 100P
R2125 2.2K
C2061 0.033
R2089 100K
R2071 100K
R2070 100K
D2011
D
C
B
A
1
2
3
4
5
6
7

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRACKET.

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND
ELECTROSTATICALLY SENSITIVE
HANDLING TECHNIQUES DESCRIB
(ES) DEVICES" SECTION OF THI

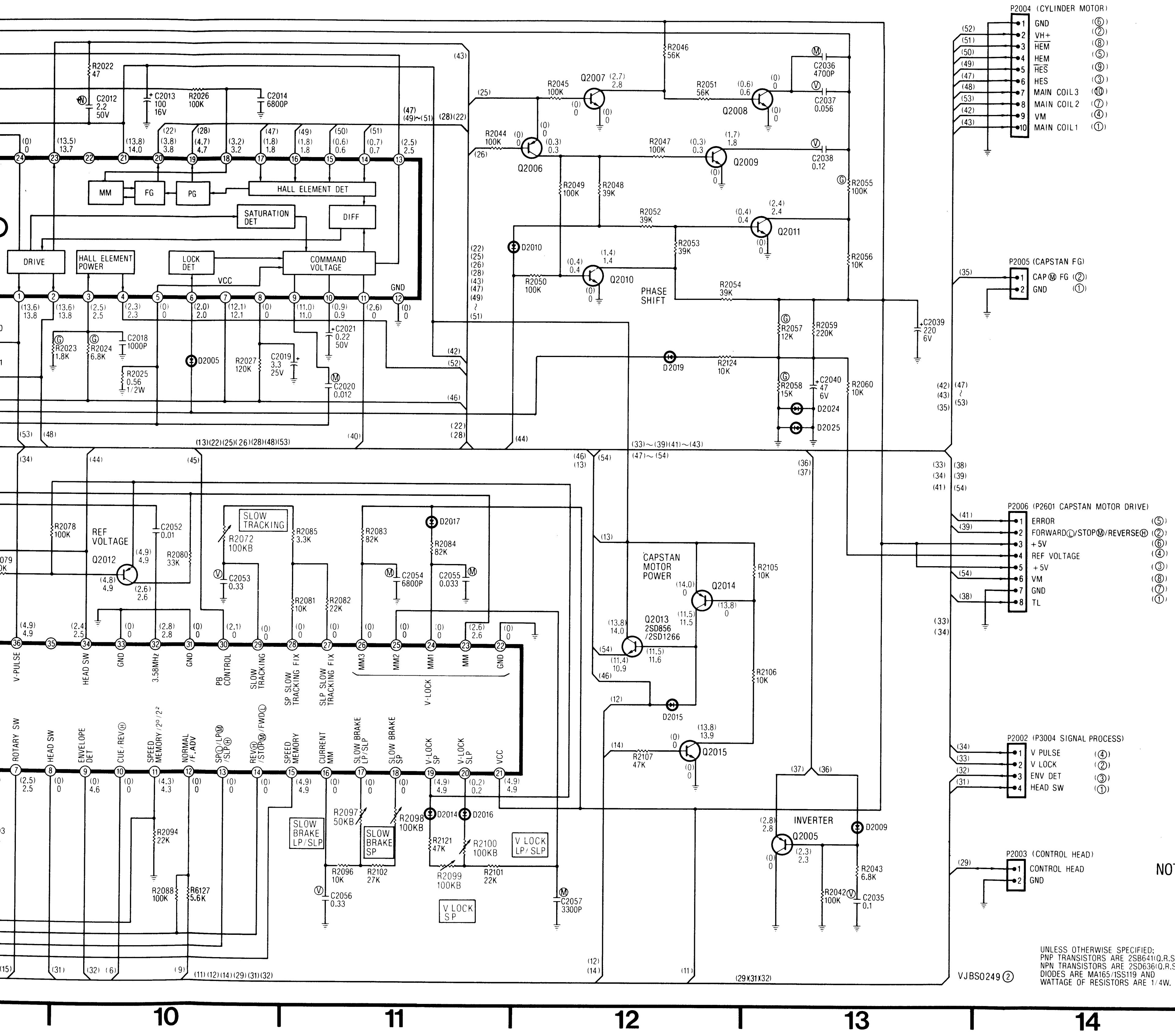


CAPSTAN START
CAPSTAN SPEED CONTROL
CAPSTAN FG AMP
IC2006 AN1358 /AN6562 /UPC1358C /HA17358
COMPARATOR
IC2007 AN1358 /AN6562 /UPC1358C /HA17358
IC2004 AN6387
CYLINDER MOTOR DRIVE
MM
FG
PG
HALL ELEMENT DET
SATURATION DET
DIFF
DRIVE
HALL ELEMENT POWER
LOCK DET
COMMAND VOLTAGE
VCC
GND
Q2002
Q2003
Q2006
Q2007
Q2008
Q2009
Q2010
Q2011
PHASE SHIFT
TP2006
TP2001
TP2002
TP2003
TP2007
TP2008
TP2009
GND 4
CLOCK
DIGITAL MM
COUNT DOWN CLOCK
VDD
TRACKING
TRACKING FIX
PG SHIFTER
IC2003 AN6356N
CYLINDER SERVO INTERFACE
1/3 DIVIDE
PHASE ADJUST
1/2 DIVIDE
TRACKING MM
PB CTL AMP
REC CTL AMP
REF VOLTAGE
Q2012
SLOW TRACKING
IC2005 UPD6110CA
FINE SLOW PROCESS
CURRENT LIMIT
V-JITTER
FORCED SP
V-LOCK
V-PULSE
HEAD SW
3.58MHz
PB CONTROL
SLOW TRACKING
SP SLOW TRACKING FIX
SLP SLOW TRACKING FIX
MM3
MM2
MM1
MM
TEST
CAP
H-SWAY
ROTARY SW
ENVELOPE DET
CUE/REV
SPEED MEMORY
NORMAL /F.ADV
SLOW BRAKE LP/SLP
SLOW BRAKE SP
V LOCK LP/SLP
V LOCK SP
CURRENT MM
CAPSTAN MOTOR POWER
Q2013 2SD856 /2SD1266
Q2014
Q2015
INVERTER
Q2005
5
6
7
8
9
10
11
12
13

RACKET.
UT BRACKET.

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

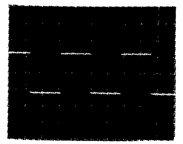

P2004 (CYLINDER MOTOR)
1 GND (⑥)
2 VH+ (②)
3 HEM (⑧)
4 HEM (⑤)
5 HES (⑨)
6 HES (③)
7 MAIN COIL 3 (⑩)
8 MAIN COIL 2 (⑦)
9 VM (④)
10 MAIN COIL 1 (①)
P2005 (CAPSTAN FG)
1 CAP Ⓜ FG (②)
2 GND (①)
P2006 (P2601 CAPSTAN MOTOR DRIVE)
1 ERROR (⑤)
2 FORWARDⓁ/STOPⓂ/REVERSEⒽ (②)
3 +5V (⑥)
4 REF VOLTAGE (④)
5 +5V (③)
6 VM (⑧)
7 GND (⑦)
8 TL (①)
P2002 (P3004 SIGNAL PROCESS)
1 V PULSE (④)
2 V LOCK (②)
3 ENV DET (③)
4 HEAD SW (①)
P2003 (CONTROL HEAD)
1 CONTROL HEAD
2 GND
MM
FG
PG
HALL ELEMENT DET
SATURATION DET
DIFF
DRIVE
HALL ELEMENT POWER
LOCK DET
COMMAND VOLTAGE
VCC
GND
Q2006
Q2007
Q2008
Q2009
Q2010
Q2011
PHASE SHIFT
REF VOLTAGE
Q2012
SLOW TRACKING
CAPSTAN MOTOR POWER
Q2013 2SD856 /2SD1266
Q2014
Q2015
INVERTER
Q2005
V-PULSE
HEAD SW
GND
3.58MHz
PB CONTROL
SLOW TRACKING
SP SLOW TRACKING FIX
SLP SLOW TRACKING FIX
MM3
MM2
MM1
MM
V-LOCK
ROTARY SW
HEAD SW
ENVELOPE DET
CUE/REVⒽ
SPEED MEMORY
NORMAL /F.ADV
SPⓁ/LPⓂ /SLPⒽ
REVⒽ /STOPⓂ/FWDⓁ
SPEED MEMORY
CURRENT MM
SLOW BRAKE LP/SLP
SLOW BRAKE SP
V-LOCK SP
V-LOCK SLP
VCC
SLOW BRAKE LP/SLP
SLOW BRAKE SP
V LOCK LP/SLP
V LOCK SP
VJBS0249②
10
11
12
13
14

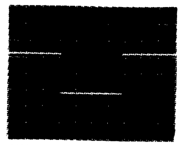
UNLESS OTHERWISE SPECIFIED;
PNP TRANSISTORS ARE 2SB641(Q.R.S)/2SA937M(R),
NPN TRANSISTORS ARE 2SD636(Q.R.S)/2SC2021/M(R).
DIODES ARE MA165/1SS119 AND
WATTAGE OF RESISTORS ARE 1/4W.

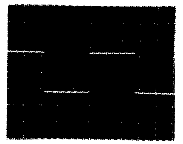
NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 2000 SERIES
SCHEMATIC DIAGRAM···R2002
(R2002 IS ABBREVIATED TO R2)

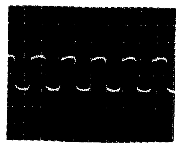
PV1525 PV1530

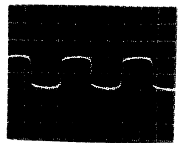
SERVO SCHEMATIC DIAGRAM	
Q2001	5-D
Q2002	6-C
Q2003	7-D
Q2004	2-B
Q2005	13-A
Q2006	12-D
Q2007	12-D
Q2008	13-D
Q2009	13-D
Q2010	12-D
Q2011	13-D
Q2012	10-B
Q2013	12-B
Q2014	12-B
Q2015	12-B

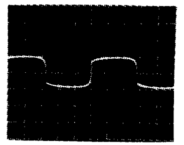

IC2001 ⑰ REC/PB. SP.
2V/0.5msec. div.

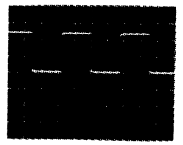

IC2001 ⑰ REC/PB. LP.
2V/0.5msec. div.

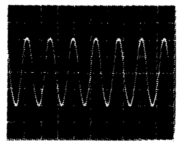

IC2001 ⑰ REC/PB. SLP.
2V/0.5msec. div.

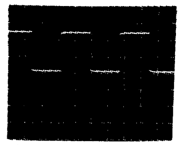

IC2001 ⑲ REC/PB. SP.
0.5V/0.5msec. div.

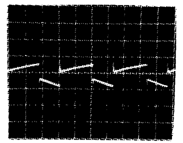

IC2001 ⑲ REC/PB. LP.
0.5V/0.5msec. div.

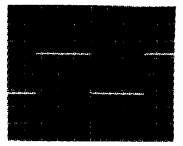

IC2001 ⑲ REC/PB. SLP.
0.5V/0.5msec. div.

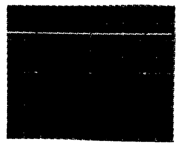

IC2002 ② REC/PB. SP. LP. SLP.
2V/20Usec. div.

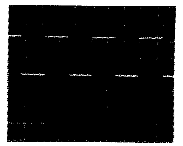

IC2002 ⑮ STOP. SP. LP. SLP.
0.2V/0.2Usec. div.

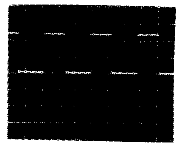

IC2002 ㉘ REC/PB. SP. LP. SLP.
2V/20Usec. div.

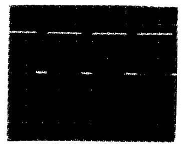

IC2003 ⑥ REC. SP. LP. SLP.
1V/10msec. div.

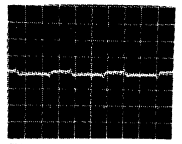

IC2003 ⑭ REC/PB. SP.LP.SLP.
2V/10msec. div.


IC2003 ⑯ REC/PB. SP. LP. SLP.
2V/10msec. div.


TP2004 REC/PB. SP.LP.SLP.
2V/0.1msec. div.


TP2005 REC/PB. SP.LP.SLP.
2V/0.1msec. div.

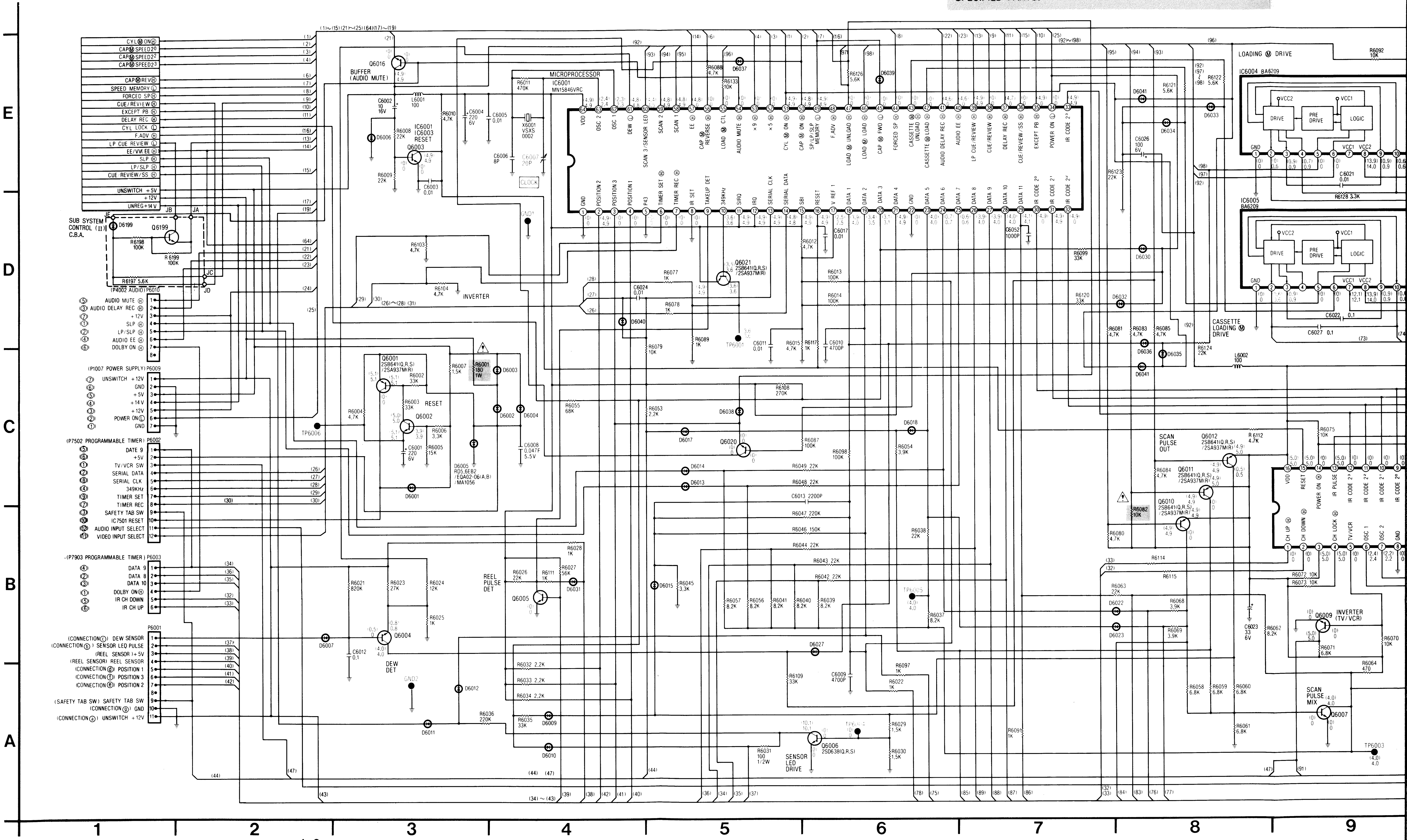

TP2008(IC2003 ⑰)REC/PB. SP.LP.SLP.
2V/2msec. div.


TP2009 PB. SP. LP. SLP.
0.5V/10msec. div.

MAIN SCHEMATIC DIAGRAM (SUB AUDIO/SYSTEM CONTROL SECTION) PV-1530

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUR
COLOR BAR
COLOR BAR



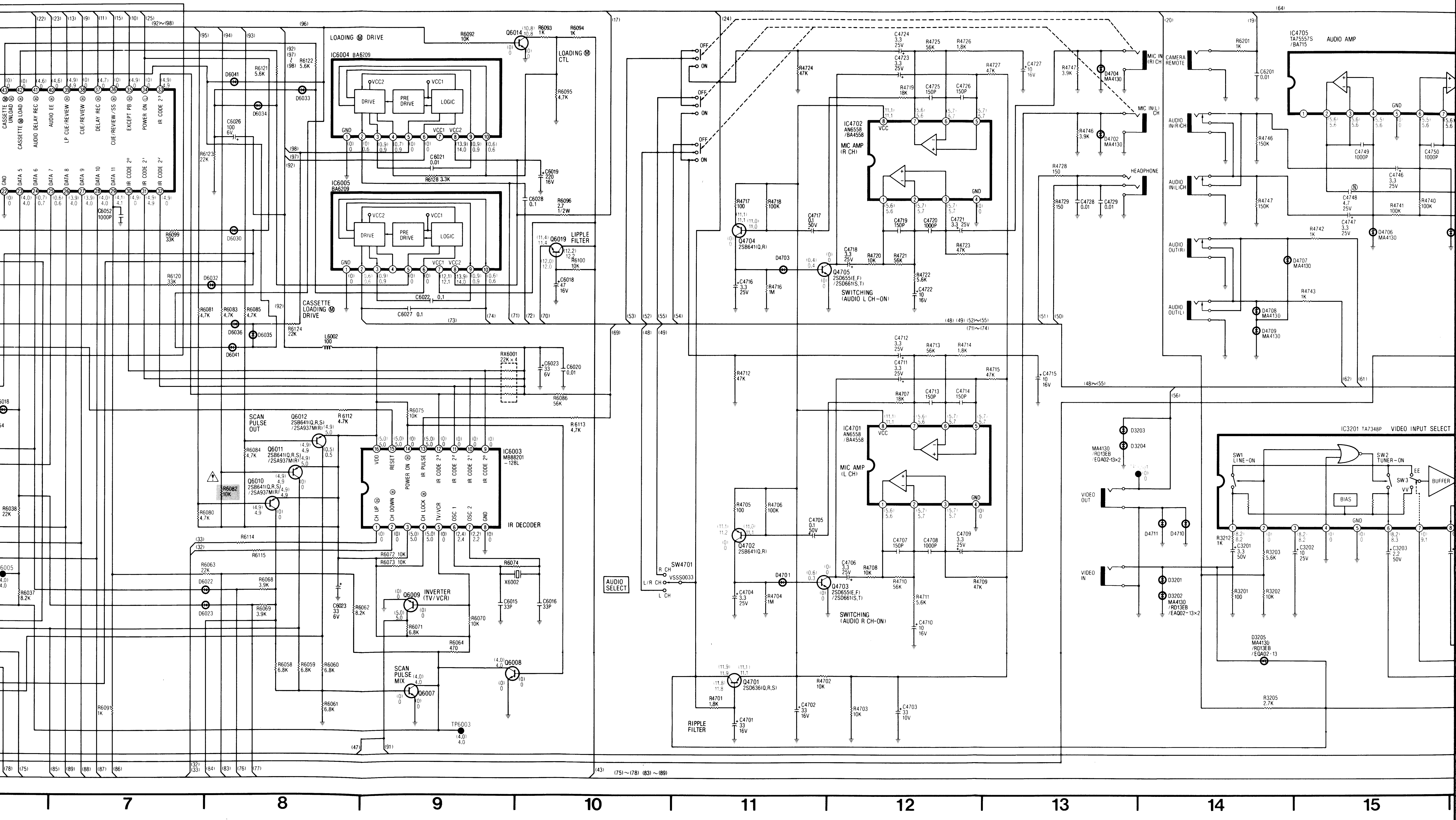
A
B
C
D
E
1
2
3
4
5
6
7
8
9
CYL Ⓜ ON Ⓗ
CAP Ⓜ SPEED 2⁰
CAP Ⓜ SPEED 2¹
CAP Ⓜ SPEED 2³
CAP Ⓜ REV Ⓗ
SPEED MEMORY Ⓛ
FORCED SP Ⓗ
CUE/REVIEW Ⓗ
EXCEPT PB Ⓗ
DELAY REC Ⓗ
CYL LOCK Ⓛ
F.ADV Ⓗ
LP CUE REVIEW Ⓛ
EE/VV EE Ⓗ
SLP Ⓗ
LP/SLP Ⓗ
CUE REVIEW/SS Ⓗ
UNSWITCH +5V
+12V
UNREG+14V
SUB SYSTEM CONTROL (II) C.B.A.
(P4002 AUDIO) P6010
AUDIO MUTE Ⓗ
AUDIO DELAY REC Ⓗ
+12V
SLP Ⓗ
LP/SLP Ⓗ
AUDIO EE Ⓗ
DOLBY ON Ⓗ
(P1007 POWER SUPPLY) P6009
UNSWITCH +12V
GND
+5V
+14V
+12V
POWER ON Ⓛ
GND
(P7502 PROGRAMMABLE TIMER) P6002
DATE 9
+5V
TV/VCR SW
SERIAL DATA
SERIAL CLK
349KHz
TIMER SET
TIMER REC
SAFETY TAB SW
IC7501 RESET
AUDIO INPUT SELECT
VIDEO INPUT SELECT
(P7903 PROGRAMMABLE TIMER) P6003
DATA 9
DATA 8
DATA 10
DOLBY ON Ⓗ
IR CH DOWN
IR CH UP
P6001
(CONNECTION Ⓒ) DEW SENSOR
(CONNECTION Ⓑ) SENSOR LED PULSE
(REEL SENSOR) +5V
(REEL SENSOR) REEL SENSOR
(CONNECTION Ⓓ) POSITION 1
(CONNECTION Ⓕ) POSITION 3
(CONNECTION Ⓔ) POSITION 2
(SAFETY TAB SW) SAFETY TAB SW
(CONNECTION Ⓖ) GND
(CONNECTION Ⓐ) UNSWITCH +12V
Q6016 BUFFER (AUDIO MUTE)
IC6001 IC6003 RESET
MICROPROCESSOR IC6001 MN15846VRC
X6001 VSXS 0002
CLOCK
INVERTER
Q6001 2SB641(Q,R,S)/2SA937M(R)
RESET Q6002
R6001 180 1W
D6005 RD5.6EB2 /EQA02-06(A,B) /MA1056
Q6021 2SB641(Q,R,S)/2SA937M(R)
Q6004 DEW DET
REEL PULSE DET Q6005
Q6006 2SD638(Q,R,S)
SENSOR LED DRIVE
LOADING Ⓜ DRIVE
IC6004 BA6209
IC6005 BA6209
DRIVE
PRE DRIVE
LOGIC
CASSETTE LOADING Ⓜ DRIVE
SCAN PULSE OUT
Q6012 2SB641(Q,R,S)/2SA937M(R)
Q6011 2SB641(Q,R,S)/2SA937M(R)
Q6010 2SB641(Q,R,S)/2SA937M(R)
R6082 10K
Q6009 INVERTER (TV/VCR)
SCAN PULSE MIX Q6007
TP6003
TP6006

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRACKET.

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITI (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.



LOADING Ⓜ DRIVE
IC6004 BA6209
IC6005 BA6209
DRIVE
PRE DRIVE
LOGIC
VCC1
VCC2
GND
CASSETTE LOADING Ⓜ DRIVE
LOADING Ⓜ CTL
Q6014
Q6019 LIPPLE FILTER
R6092 10K
R6093 1K
R6094 1K
R6095 4.7K
R6096 2.7 1/2W
R6100 10K
C6019 220 16V
C6028 0.1
C6018 47 16V
C6021 0.01
C6022 0.1
C6027 0.1
R6128 3.3K
CASSETTE UNLOAD
CASSETTE Ⓜ LOAD
AUDIO DELAY REC Ⓗ
AUDIO EE Ⓗ
LP CUE/REVIEW Ⓗ
CUE/REVIEW Ⓗ
DELAY REC Ⓗ
CUE/REVIEW/SS Ⓗ
EXCEPT PB Ⓗ
POWER ON Ⓛ
IR CODE 2³
GND
DATA 5
DATA 6
DATA 7
DATA 8
DATA 9
DATA 10
DATA 11
IR CODE 2⁰
IR CODE 2¹
IR CODE 2²
C6052 1000P
C6026 100 6V
D6041
D6034
D6033
D6030
D6032
D6036
D6035
R6121 5.6K
R6122 5.6K
R6123 22K
R6099 33K
R6120 33K
R6081 4.7K
R6083 4.7K
R6085 4.7K
R6124 22K
L6002 100
RX6001 22K × 4
C6023 33 6V
C6020 0.01
R6086 56K
R6113 4.7K
R6075 10K
SCAN PULSE OUT
Q6012 2SB641(Q,R,S) /2SA937M(R)
Q6011 2SB641(Q,R,S) /2SA937M(R)
Q6010 2SB641(Q,R,S) /2SA937M(R)
R6112 4.7K
R6084 4.7K
R6082 10K
R6080 4.7K
IC6003 MB88201 -128L
VDD
RESET
POWER ON Ⓗ
IR PULSE
IR CODE 2³
IR CODE 2²
IR CODE 2¹
IR CODE 2⁰
CH UP Ⓛ
CH DOWN Ⓛ
CH LOCK Ⓛ
TV/VCR
OSC 1
OSC 2
GND
IR DECODER
R6114
R6115
R6063 22K
D6022
D6023
R6068 3.9K
R6069 3.9K
R6037 8.2K
R6038 22K
C6023 33 6V
R6062 8.2K
Q6009 INVERTER (TV/VCR)
R6071 6.8K
R6070 10K
R6072 10K
R6073 10K
R6074
X6002
C6015 33P
C6016 33P
R6064 470
Q6008
SCAN PULSE MIX
Q6007
R6058 6.8K
R6059 6.8K
R6060 6.8K
R6061 6.8K
R6091 1K
TP6003
AUDIO SELECT
SW4701 VSS50033
R CH
L/R CH
L CH
OFF
ON
IC4702 AN6558 /BA4558
MIC AMP (R CH)
IC4701 AN6558 /BA4558
MIC AMP (L CH)
VCC
Q4704 2SB641(Q,R)
Q4705 2SD655(E,F) /2SD661(S,T)
SWITCHING (AUDIO L CH-ON)
Q4702 2SB641(Q,R)
Q4703 2SD655(E,F) /2SD661(S,T)
SWITCHING (AUDIO R CH-ON)
Q4701 2SD636(Q,R,S)
RIPPLE FILTER
D4703
D4701
C4724 3.3 25V
C4723 3.3 25V
R4725 56K
R4726 1.8K
R4727 47K
C4727 10 16V
R4724 47K
R4719 18K
C4725 150P
C4726 150P
R4717 100
R4718 100K
C4717 0.1 50V
C4719 150P
C4720 1000P
C4721 3.3 25V
R4723 47K
C4718 3.3 25V
R4720 10K
R4721 56K
R4722 5.6K
C4722 10 16V
C4716 3.3 25V
R4716 1M
C4712 3.3 25V
R4713 56K
R4714 1.8K
C4711 3.3 25V
R4715 47K
C4715 10 16V
R4712 47K
R4707 18K
C4713 150P
C4714 150P
R4705 100
R4706 100K
C4705 0.1 50V
C4707 150P
C4708 1000P
C4709 3.3 25V
C4706 3.3 25V
R4708 10K
R4710 56K
R4709 47K
C4704 3.3 25V
R4704 1M
R4711 5.6K
C4710 10 16V
R4701 1.8K
C4701 33 16V
R4702 10K
C4702 33 16V
R4703 10K
C4703 33 10V
R4747 3.9K
R4746 3.9K
D4704 MA4130
D4702 MA4130
MIC IN (R) CH
MIC IN (L) CH
HEADPHONE
R4728 150
R4729 150
C4728 0.01
C4729 0.01
CAMERA REMOTE
R6201 1K
C6201 0.01
AUDIO IN(R)CH
AUDIO IN(L)CH
AUDIO OUT(R)
AUDIO OUT(L)
R4746 150K
R4747 150K
R4742 1K
R4743 1K
D4706 MA4130
D4707 MA4130
D4708 MA4130
D4709 MA4130
IC4705 TA75557S /BA715
AUDIO AMP
C4749 1000P
C4750 1000P
C4746 3.3 25V
C4748 4.7 25V
C4747 3.3 25V
R4741 100K
R4740 100K
D3203
D3204
MA4130 /RD13EB /EQA02-13×2
VIDEO OUT
VIDEO IN
D4711
D4710
D3201
D3202 MA4130 /RD13EB /EQA02-13×2
D3205 MA4130 /RD13EB /EQA02-13
IC3201 TA7348P
VIDEO INPUT SELECT
SW1 LINE-ON
SW2 TUNER-ON
SW3
EE
VV
BIAS
BUFFER
R3212 8.2
C3201 3.3 50V
R3203 5.6K
C3202 10 25V
C3203 2.2 50V
R3201 100
R3202 10K
R3205 2.7K
7
8
9
10
11
12
13
14
15

4-3
SUB AUDIO/SYSTEM CONTROL SCHEMATIC DIAGAM (MAIN C.B.A.) PV-1530

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

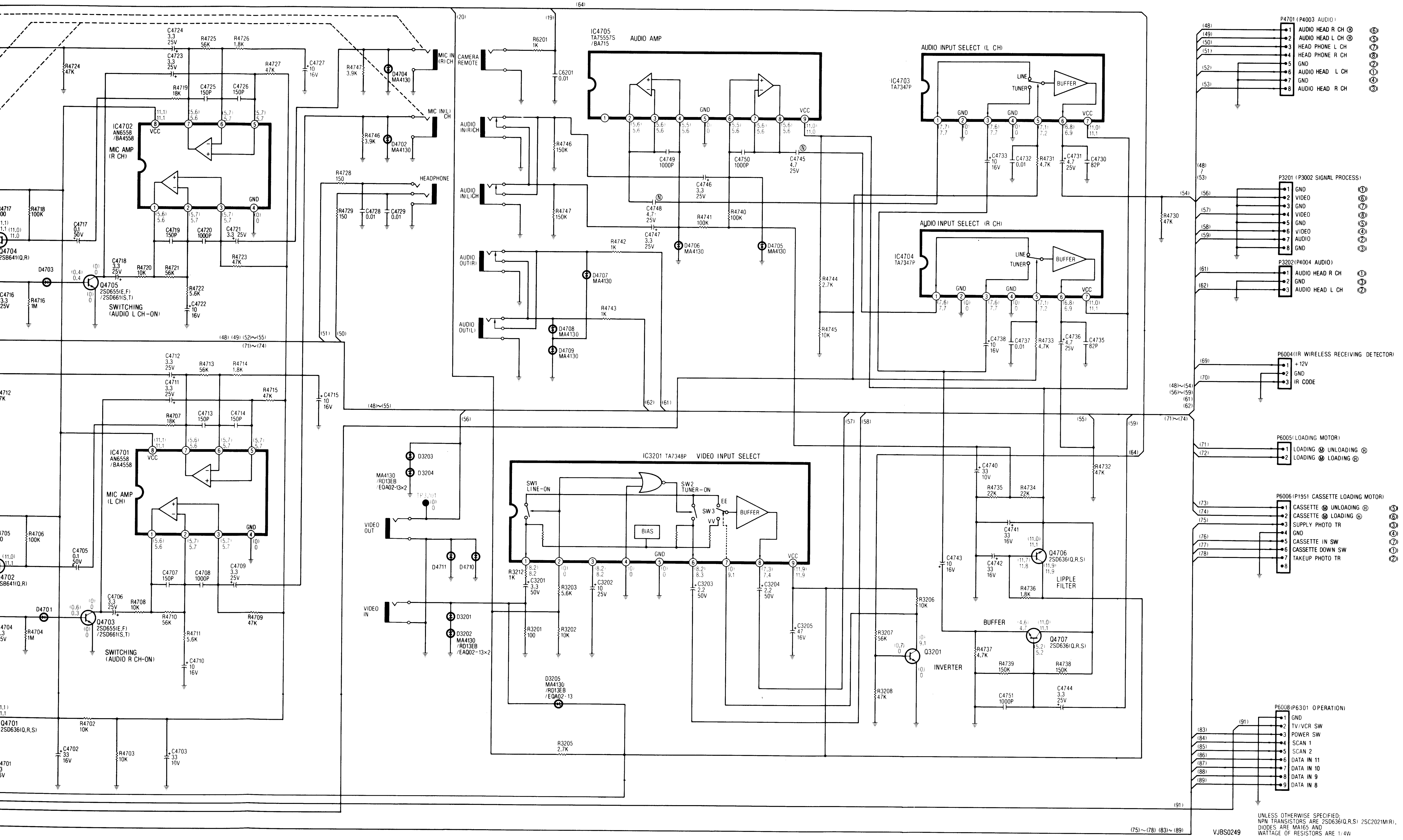
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

SYSTEM CONTROL SECTION

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 6000 SERIES
SCHEMATIC DIAGRAM···R6002
(R6002 IS ABBREVIATED TO R2)

SUB AUDIO SECTION

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 4700 SERIES
SCHEMATIC DIAGRAM···R4702
(R4702 IS ABBREVIATED TO R2)


IC4705 TA7555TS /BA715 AUDIO AMP
IC4702 AN6558 /BA4558 MIC AMP (R CH)
IC4701 AN6558 /BA4558 MIC AMP (L CH)
IC4703 TA7347P AUDIO INPUT SELECT (L CH)
IC4704 TA7347P AUDIO INPUT SELECT (R CH)
IC3201 TA7348P VIDEO INPUT SELECT
LINE TUNER BUFFER
SW1 LINE-ON
SW2 TUNER-ON
SW3
EE
VV
BIAS
GND
VCC
MIC IN (R) CH
MIC IN (L) CH
CAMERA REMOTE
HEADPHONE
AUDIO IN (R)CH
AUDIO IN (L)CH
AUDIO OUT (R)
AUDIO OUT (L)
VIDEO OUT
VIDEO IN
Q4705 2SD655(E,F) /2SD661(S,T) SWITCHING (AUDIO L CH-ON)
Q4703 2SD655(E,F) /2SD661(S,T) SWITCHING (AUDIO R CH-ON)
Q4704 2SB641(Q,R)
Q4702 2SB641(Q,R)
Q4701 2SD636(Q,R,S)
Q4706 2SD636(Q,R,S) LIPPLE FILTER
Q4707 2SD636(Q,R,S) BUFFER
Q3201 INVERTER
D4704 MA4130
D4702 MA4130
D4706 MA4130
D4705 MA4130
D4707 MA4130
D4708 MA4130
D4709 MA4130
D3203
D3204
MA4130 /RD13EB /EQA02-13×2
D4711
D4710
D3201
D3202 MA4130 /RD13EB /EQA02-13×2
D3205 MA4130 /RD13EB /EQA02-13
P4701 (P4003 AUDIO)
1 AUDIO HEAD R CH Ⓗ ⑥
2 AUDIO HEAD L CH Ⓗ ⑤
3 HEAD PHONE L CH ⑦
4 HEAD PHONE R CH ⑧
5 GND ②
6 AUDIO HEAD L CH ①
7 GND ④
8 AUDIO HEAD R CH ③
P3201 (P3002 SIGNAL PROCESS)
1 GND ①
2 VIDEO ⑥
3 GND ⑦
4 VIDEO ⑧
5 GND ⑤
6 VIDEO ④
7 AUDIO ②
8 GND ③
P3202 (P4004 AUDIO)
1 AUDIO HEAD R CH ①
2 GND ③
3 AUDIO HEAD L CH ②
P6004 (IR WIRELESS RECEIVING DETECTOR)
1 +12V
2 GND
3 IR CODE
P6005 (LOADING MOTOR)
1 LOADING Ⓜ UNLOADING Ⓗ
2 LOADING Ⓜ LOADING Ⓗ
P6006 (P1551 CASSETTE LOADING MOTOR)
1 CASSETTE Ⓜ UNLOAOING Ⓗ ⑤
2 CASSETTE Ⓜ LOADING Ⓗ ⑥
3 SUPPLY PHOTO TR ③
4 GND ④
5 CASSETTE IN SW ⑦
6 CASSETTE DOWN SW ①
7 TAKEUP PHOTO TR ②
8
P6008 (P6301 OPERATION)
1 GND
2 TV/VCR SW
3 POWER SW
4 SCAN 1
5 SCAN 2
6 DATA IN 11
7 DATA IN 10
8 DATA IN 9
9 DATA IN 8
(48)~(54) (56)~(59) (61) (62)
(71)~(74)
(75)~(78) (83)~(89)
VJBS0249
11
12
13
14
15
16
17
18

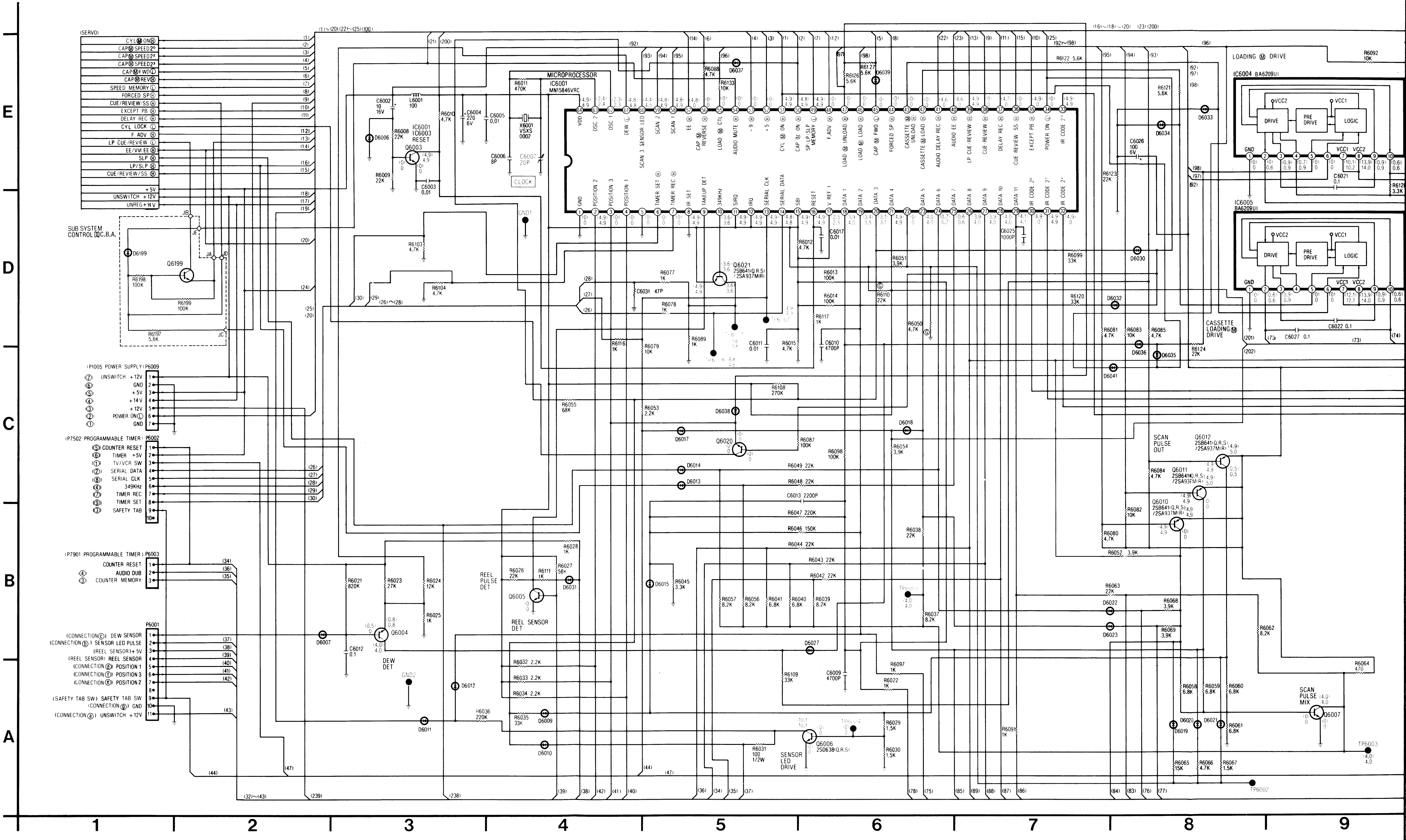
UNLESS OTHERWISE SPECIFIED;
NPN TRANSISTORS ARE 2SD636(Q,R,S) 2SC2021M(R),
DIODES ARE MA165 AND
WATTAGE OF RESISTORS ARE 1/4W

4-4
AUDIO/SYSTEM CONTROL SCHEMATIC DIAGRAM(MAIN C.B.A.) PV-1525

MAIN SCHEMATIC DIAGRAM (AUDIO/SYSTEM CONTROL SECTION) PV-1525

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP
COLOR BAR SIGNAL IN SP



(SERVO)
CYL Ⓜ ON Ⓗ
CAP Ⓜ SPEED 2⁰
CAP Ⓜ SPEED 2¹
CAP Ⓜ SPEED 2²
CAP Ⓜ FWD Ⓛ
CAP Ⓜ REV Ⓗ
SPEED MEMORY Ⓛ
FORCED SP Ⓗ
CUE/REVIEW/SS Ⓗ
EXCEPT PB Ⓗ
DELAY REC Ⓗ
CYL LOCK Ⓛ
F ADV Ⓗ
LP CUE/REVIEW Ⓛ
EE/VVI EE Ⓗ
SLP Ⓗ
LP/SLP Ⓗ
CUE/REVIEW/SS Ⓗ
+5V
UNSWITCH +12V
UNREG +14V
SUB SYSTEM CONTROL Ⓜ C.B.A.
D6199
Q6199
R6198 100K
R6199 100K
R6197 5.6K
(P1005 POWER SUPPLY) P6009
UNSWITCH +12V
GND
+5V
+14V
+12V
POWER ON Ⓛ
GND
(P7502 PROGRAMMABLE TIMER) P6002
COUNTER RESET
TIMER +5V
TV/VCR SW
SERIAL DATA
SERIAL CLK
349KHz
TIMER REC
TIMER SET
SAFETY TAB
(P7901 PROGRAMMABLE TIMER) P6003
COUNTER RESET
AUDIO DUB
COUNTER MEMORY
P6001
(CONNECTION Ⓒ) DEW SENSOR
(CONNECTION Ⓑ) SENSOR LED PULSE
(REEL SENSOR) +5V
(REEL SENSOR) REEL SENSOR
(CONNECTION Ⓑ) POSITION 1
(CONNECTION Ⓓ) POSITION 3
(CONNECTION Ⓔ) POSITION 2
(SAFETY TAB SW) SAFETY TAB SW
(CONNECTION Ⓑ) GND
(CONNECTION Ⓐ) UNSWITCH +12V
MICROPROCESSOR
IC6001 MN15846VRC
IC6001 IC6003 RESET
Q6003
X6001 VSXS 0002
CLOCK
GND1
GND2
Q6021 2SB641(Q.R.S) /2SA937M(R)
Q6020
Q6004 DEW DET
Q6005 REEL PULSE DET
REEL SENSOR DET
Q6006 2SD638(Q.R.S) SENSOR LED DRIVE
LOADING Ⓜ DRIVE
IC6004 BA6209U
IC6005 BA6209U
DRIVE
PRE DRIVE
LOGIC
VCC1
VCC2
GND
CASSETTE LOADING Ⓜ DRIVE
SCAN PULSE OUT
Q6012 2SB641(Q.R.S) /2SA937M(R)
Q6011 2SB641(Q.R.S) /2SA937M(R)
Q6010 2SB641(Q.R.S) /2SA937M(R)
SCAN PULSE MIX
Q6007
TP6002
TP6003
VDD
OSC 2
OSC 1
DEW Ⓛ
SCAN 3 SENSOR LED
SCAN 2
SCAN 1
EE Ⓗ
CAP Ⓜ REVERSE
LOAD Ⓜ CTL
AUDIO MUTE
CYL Ⓜ ON
CAP Ⓜ ON
SP/LP/SLP MEMORY
F.ADV
LOAD Ⓜ UNLOAD
LOAD Ⓜ LOAD
CAP Ⓜ FWD
FORCED SP
CASSETTE Ⓜ UNLOAD
CASSETTE Ⓜ LOAD
AUDIO DELAY REC
AUDIO EE
LP CUE/REVIEW
CUE REVIEW
DELAY REC
CUE REVIEW SS
EXCEPT PB
POWER ON
IR CODE 2⁰
IR CODE 2¹
IR CODE 2²
POSITION 2
POSITION 3
POSITION 1
TIMER SET
TIMER REC
IR SET
TAKEUP DET
349KHz
SIRQ
IRQ
SERIAL CLK
SERIAL DATA
SBI
RESET
V REF 1
DATA 1
DATA 2
DATA 3
DATA 4
DATA 5
DATA 6
DATA 7
DATA 8
DATA 9
DATA 10
DATA 11
1
2
3
4
5
6
7
8
9
A
B
C
D
E

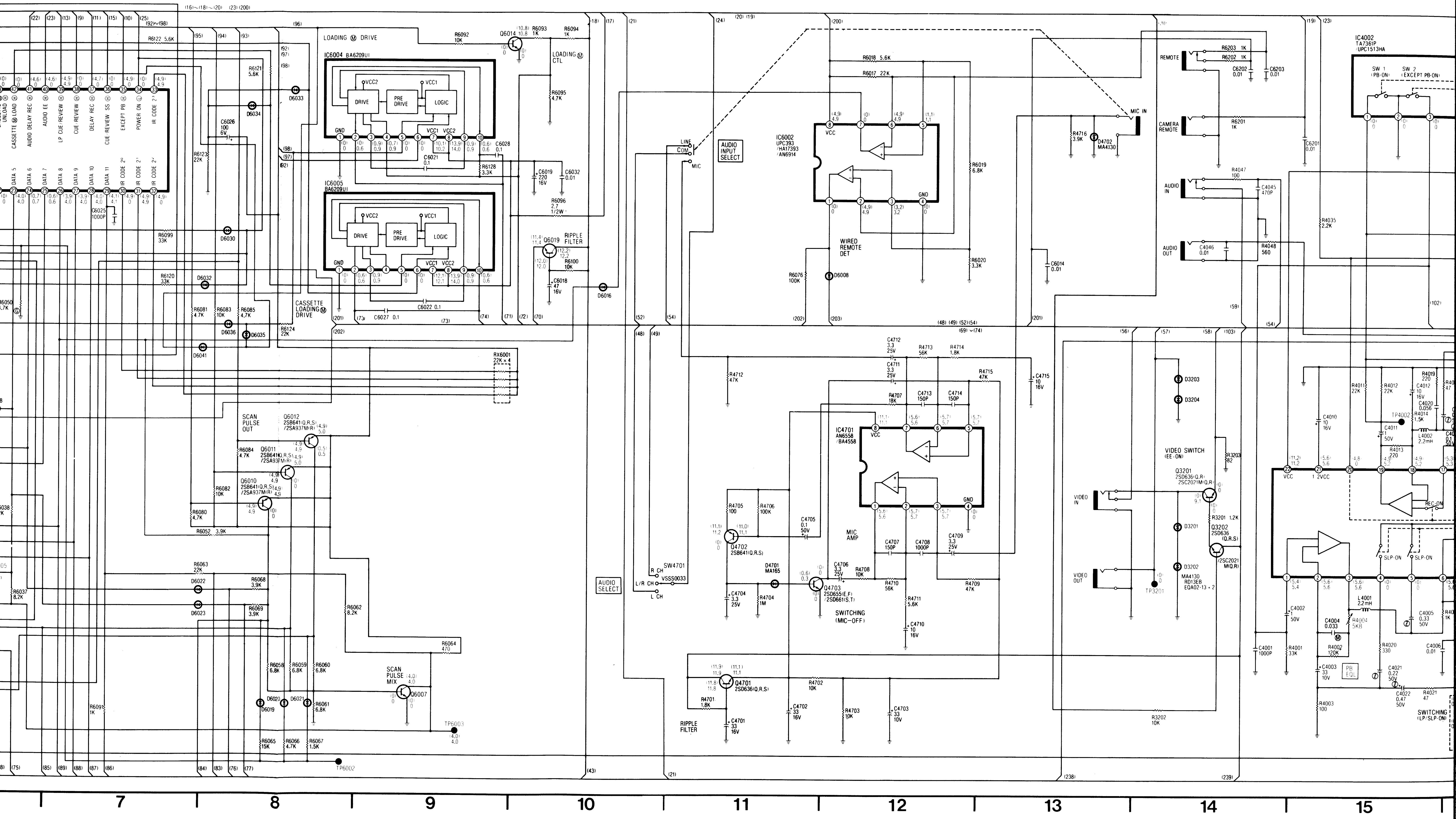
PORTANT SAFETY NOTICE:
MPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL
ARACTERISTICS IMPORTANT FOR SAFETY.
EN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE
ECIFIED PARTS.

VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRACKET.

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

SYSTEM CON
NOTE: REF. NO. (
EXAMPLE:
SCHE
(R6002 IS


LOADING Ⓜ DRIVE
IC6004 BA6209U
IC6005 BA6209U
VCC2
VCC1
DRIVE
PRE DRIVE
LOGIC
GND
Q6014
LOADING Ⓜ CTL
Q6019 RIPPLE FILTER
CASSETTE LOADING Ⓜ DRIVE
RX6001 22K × 4
UNLOAD
CASSETTE Ⓜ LOAD
AUDIO DELAY REC
AUDIO EE
LP CUE-REVIEW
CUE REVIEW
DELAY REC
CUE REVIEW SS
EXCEPT PB
POWER ON
IR CODE 2
DATA 5
DATA 6
DATA 7
DATA 8
DATA 9
DATA 10
DATA 11
IR CODE 0
IR CODE 1
SCAN PULSE OUT
Q6012 2SB641(Q,R,S) /2SA937M(R)
Q6011 2SB641(Q,R,S) /2SA937M(R)
Q6010 2SB641(Q,R,S) /2SA937M(R)
SCAN PULSE MIX
Q6007
TP6003
TP6002
D6033
D6034
D6030
D6032
D6036
D6035
D6041
D6016
D6022
D6023
D6019
D6020
D6021
LINE
COM
MIC
AUDIO INPUT SELECT
AUDIO SELECT
SW4701 VSS5033
R CH
L/R CH
L CH
IC6002 UPC393 /HA17393 /AN6914
VCC
GND
WIRED REMOTE DET
D6008
IC4701 AN6558 /BA4558
MIC AMP
Q4702 2SB641(Q,R,S)
D4701 MA165
Q4703 2SD655(E,F) /2SD661(S,T)
SWITCHING (MIC-OFF)
Q4701 2SD636(Q,R,S)
RIPPLE FILTER
MIC IN
D4702 MA4130
REMOTE
CAMERA REMOTE
AUDIO IN
AUDIO OUT
VIDEO IN
VIDEO OUT
VIDEO SWITCH (EE-ON)
Q3201 2SD636(Q,R) 2SC2021M(Q,R)
Q3202 2SD636 (Q,R,S) /2SC2021 M(Q,R)
D3203
D3204
D3201
D3202
MA4130 RD13EB EQA02-13 × 2
TP3201
IC4002 TA7361P /UPC1513HA
SW 1 (PB-ON)
SW 2 (EXCEPT PB-ON)
VCC
1 2VCC
REC-ON
SLP-ON
TP4002
PB EQL
SWITCHING (LP/SLP-ON)
7
8
9
10
11
12
13
14
15

EXT TO WIRING PLUGS INDICATE
S TO OTHER SCHEMATIC DIAGRAM.

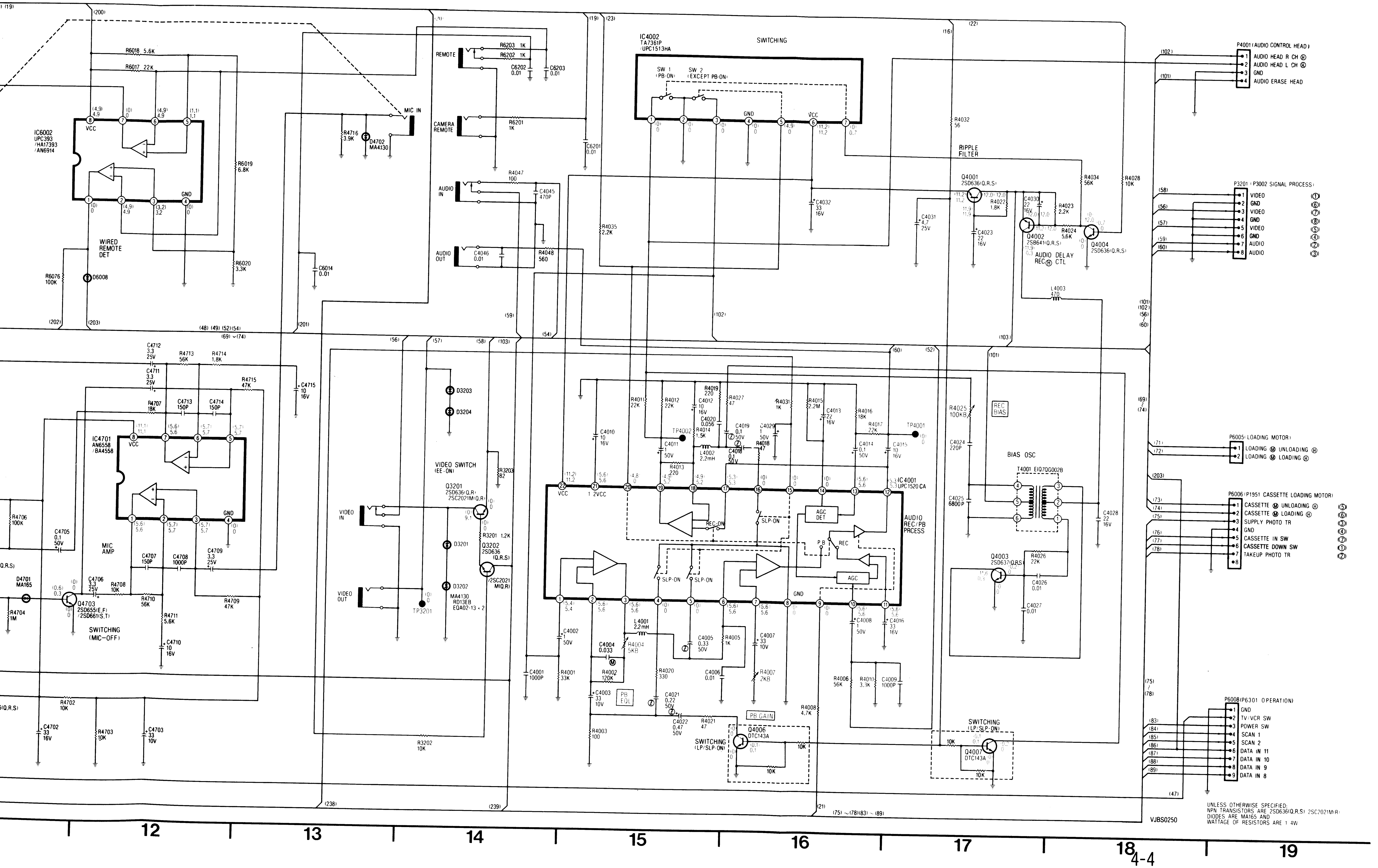
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

SYSTEM CONTROL SECTION

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 6000 SERIES
SCHEMATIC DIAGRAM···R6002
(R6002 IS ABBREVIATED TO R2)

AUDIO SECTION

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 4000 SERIES
SCHEMATIC DIAGRAM···R4002
(R4002 IS ABBREVIATED TO R2)


IC6002
UPC393
/HA17393
/AN6914
VCC
GND
R6018 5.6K
R6017 22K
R6019 6.8K
R6020 3.3K
R6076 100K
D6008
WIRED REMOTE DET
REMOTE
CAMERA REMOTE
AUDIO IN
AUDIO OUT
MIC IN
R6203 1K
R6202 1K
C6202 0.01
C6203 0.01
R6201 1K
C6201 0.01
R4047 100
C4045 470P
C4046 0.01
R4048 560
C6014 0.01
R4716 3.9K
D4702 MA4130
IC4002
TA7361P
/UPC1513HA
SWITCHING
SW 1 (PB·ON)
SW 2 (EXCEPT PB·ON)
GND
VCC
R4035 2.2K
C4032 33 16V
C4031 4.7 25V
R4032 56
RIPPLE FILTER
Q4001 2SD636(Q,R,S)
C4030 22 16V
R4022 1.8K
R4023 2.2K
R4034 56K
R4028 10K
C4023 22 16V
Q4002 2SB641(Q,R,S)
R4024 5.6K
Q4004 2SD636(Q,R,S)
AUDIO DELAY REC(H) CTL
L4003 470
P4001 (AUDIO CONTROL HEAD)
1 AUDIO HEAD R CH (R)
2 AUDIO HEAD L CH (R)
3 GND
4 AUDIO ERASE HEAD
P3201 (P3002 SIGNAL PROCESS)
1 VIDEO
2 GND
3 VIDEO
4 GND
5 VIDEO
6 GND
7 AUDIO
8 AUDIO
IC4701
AN6558
/BA4558
VCC
GND
C4712 3.3 25V
C4711 3.3 25V
R4713 56K
R4714 1.8K
R4715 47K
C4715 10 16V
R4707 18K
C4713 150P
C4714 150P
R4706 100K
C4705 0.1 50V
MIC AMP
C4707 150P
C4708 1000P
C4709 3.3 25V
R4709 47K
D4701 MA165
Q4703 2SD655(E,F) /2SD661(S,T)
C4706 3.3 25V
R4708 10K
R4710 56K
R4711 5.6K
C4710 10 16V
SWITCHING (MIC-OFF)
R4704 1M
R4702 10K
C4702 33 16V
R4703 10K
C4703 33 10V
D3203
D3204
VIDEO SWITCH (EE·ON)
Q3201 2SD636(Q,R) /2SC2021M(Q,R)
R3203 82
R3201 1.2K
Q3202 2SD636 (Q,R,S)
/2SC2021 M(Q,R)
VIDEO IN
VIDEO OUT
D3201
D3202
MA4130 RD13EB EQA02-13 · 2
TP3201
R3202 10K
IC4001
UPC1520 CA
AUDIO REC/PB PRCESS
VCC
1 2VCC
REC-ON
SLP-ON
AGC DET
PB
REC
AGC
GND
R4011 22K
R4012 22K
R4019 220
C4012 10 16V
R4027 47
R4031 1K
R4015 2.2M
C4013 22 16V
R4016 18K
R4017 22K
TP4001
TP4002
C4020 0.056
R4014 1.5K
C4019 0.1 50V
C4029 1 50V
R4018 47
C4018 0.1 50V
L4002 2.2mH
C4011 1 50V
R4013 220
C4010 10 16V
C4014 0.1 50V
C4015 10 16V
C4002 1 50V
C4004 0.033
R4004 5KB
L4001 2.2mH
R4002 120K
C4003 33 10V
PB EQL
R4020 330
C4021 0.22 50V
C4005 0.33 50V
R4005 1K
C4007 33 10V
C4006 0.01
R4007 2KB
C4008 1 50V
C4016 33 16V
R4006 56K
R4010 3.3K
C4009 1000P
C4001 1000P
R4001 33K
R4003 100
C4022 0.47 50V
R4021 47
PB GAIN
R4008 4.7K
SWITCHING (LP/SLP·ON)
Q4006 DTC143A
10K
R4025 100KB
REC BIAS
C4024 220P
BIAS OSC
T4001 EIQ7QG002B
C4025 6800P
C4028 22 16V
Q4003 2SD637(Q,R,S)
R4026 22K
C4026 0.01
C4027 0.01
SWITCHING (LP/SLP·ON)
Q4007 DTC143A
P6005 (LOADING MOTOR)
1 LOADING (M) UNLOADING (H)
2 LOADING (M) LOADING (H)
P6006 (P1551 CASSETTE LOADING MOTOR)
1 CASSETTE (M) UNLOADING (H)
2 CASSETTE (M) LOADING (H)
3 SUPPLY PHOTO TR
4 GND
5 CASSETTE IN SW
6 CASSETTE DOWN SW
7 TAKEUP PHOTO TR
8
P6008 (P6301 OPERATION)
1 GND
2 TV/VCR SW
3 POWER SW
4 SCAN 1
5 SCAN 2
6 DATA IN 11
7 DATA IN 10
8 DATA IN 9
9 DATA IN 8
12
13
14
15
16
17
18
19

UNLESS OTHERWISE SPECIFIED:
NPN TRANSISTORS ARE 2SD636(Q,R,S) 2SC2021M(R)
DIODES ARE MA165 AND
WATTAGE OF RESISTORS ARE 1/4W.

VJBS0250

IC6001 MATRIX CHART

IC6001 KEY MATRIX

DATA IN	SCAN OUT		
PIN NO.	59 (SCAN 2)	58 (SCAN 1)	
23 (DATA 5)	SAFETY TAB	CASSETTE UP	———
24 (DATA 6)	CASSETTE DOWN	CASSETTE IN	SLP Ⓗ
25 (DATA 7)	———	———	LP/SLP Ⓗ
26 (DATA 8)	FF	PLAY	AUDIO DUB Ⓛ
27 (DATA 9)	REW	REC	COUNTER RESET Ⓛ
28 (DATA 10)	SLOW/FA	EJECT	MEMORY COUNTER Ⓛ
29 (DATA 11)	STOP	PAUSE	POWER Ⓛ

IC6001 SAFETY DEVICE

SENSOR LED PULSE	DATA IN		
PIN NO.	18 (DATA 1)	19 (DATA 2)	20 (DATA 3)
60 (H˚ LEVEL)	DEW Ⓛ	REMOTE PAUSE Ⓛ	CYLINDER LOCK Ⓛ
60 (L˚ LEVEL)	TAKEUP PHOTO TR Ⓛ	SUPPLY PHOTO TR Ⓛ	AUTO STOP Ⓛ

IC6001 MODE SWITCH POSITION CODE

DATA IN MODE SWITCH POSITION	PIN 2 (POSITION 2)	PIN 4 (POSITION 1)	PIN 3 (POSITION 3)
EJECT	L	H	H
STOP	H	L	H
FF/REW	H	L	H
REC/PAUSE	H	L	L
REVIEW	H	L	L
PLAY	L	H	L

REF.NO.	Q2001			Q2002			Q2003			Q2004			Q2005			Q2006		
MODE	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C
STOP	0.8	0.3	0.8	1.8	1.2	1.8	1.8	2.3	4.9	0	0	4.7	0.8	0.3	0	0	0	0.3
REC	2.7	4.8	2.6	2.6	0	2.3	1.8	2.4	4.9	0	0	4.7	2.8	2.3	0	0	0	0.3
PLAY	2.7	4.8	2.6	2.6	4.9	2.3	1.8	2.4	4.9	0	0	4.7	2.8	2.3	0	0	0	0.3
CUE	2.7	4.8	2.6	2.6	4.9	4.5	1.9	2.4	4.9	0	0	4.6	2.8	2.3	0	0	0	0.3
REV	2.7	4.9	2.7	2.6	4.9	2.4	1.9	2.4	4.9	0	0	4.5	2.8	2.3	0	0	0	0.3
F.ADV.	1.2	0.6	1.2	2.6	2.0	2.6	1.8	2.4	4.9	0	0	4.6	2.8	2.3	0	0	0	0.3
SLOW(¼)	1.2	0.6	1.2	2.6	2.0	2.6	1.8	2.4	4.9	0	0	4.7	2.8	2.3	0	0	0	0.3

REF.NO.	Q2007			Q2008			Q2009			Q2010			Q2011			Q2012		
MODE	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C
STOP	0	0	2.8	0	0.6	0	0	0.3	0	0	0.2	2.8	0	0.7	0	4.9	4.9	1.8
REC	0	0	2.7	0	0.6	0	0	0.3	1.7	0	0.4	1.4	0	0.4	2.4	4.9	4.8	2.6
PLAY	0	0	2.8	0	0.6	0	0	0.3	1.8	0	0.4	1.4	0	0.4	2.4	4.9	4.9	2.6
CUE	0	0	2.8	0	0.6	0	0	0.3	1.8	0	0.4	1.4	0	0.4	2.4	4.9	4.9	2.6
REV	0	0	2.8	0	0.6	0	0	0.3	1.8	0	0.4	1.4	0	0.4	2.4	4.9	4.9	2.6
F.ADV.	0	0	2.8	0	0.6	0	0	0.3	1.8	0	0.4	1.4	0	0.4	2.4	4.9	4.8	2.7
SLOW(¼)	0	0	2.8	0	0.6	0	0	0.3	1.8	0	0.4	1.4	0	0.4	2.4	4.9	4.9	2.7

REF.NO.	Q2013			Q2014			Q2015		
MODE	E	B	C	E	B	C	E	B	C
STOP	11.2	11.8	14.0	14.0	14.0	11.8	0	0	14.0
REC	11.4	11.5	13.8	14.0	13.8	11.5	0	0	13.8
PLAY	10.9	11.6	14.0	0	0	11.5	0	0	13.9
CUE	13.3	14.0	14.0	14.0	13.2	13.9	0	0.7	0
REV	13.3	14.0	14.0	14.0	13.3	14.0	0	0.7	0
F.ADV.	13.3	14.0	14.0	14.0	13.3	14.0	0	0.7	0
SLOW(¼)	13.3	14.0	14.0	14.0	13.3	13.9	0	0.7	0

REF.NO.	Q6003			Q6004			Q6005			Q6006			Q6007			Q6010		
MODE	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C
STOP	0	0	4.9	0.8	0	4.0	0	0	4.9	0	0	10.2	0	0	4.0	4.9	4.9	0
FF	0	0	4.9	0.8	0	4.0	0	0.3	2.8	0	0	10.2	0	0	4.0	5.0	5.0	0
REW	0	0	4.9	0.8	0.5	4.0	0	0.3	2.8	0	0	10.2	0	0	4.0	4.9	4.9	0
REC	0	0	4.9	0.8	0.5	4.0	0	★	★	0	0	10.1	0	0	4.0	4.9	4.9	0
PLAY	0	0	4.9	0.8	0	4.0	0	★	★	0	0	10.1	0	0	4.0	4.9	4.9	0
CUE	0	0	4.9	0.8	0.5	4.0	0	0.3	★	0	0	10.2	0	0	4.0	4.9	4.9	0
REV	0	0	4.9	0.8	0.5	4.0	0	0.3	★	0	0	10.2	0	0	4.0	5.0	4.9	0
F.ADV.	0	0	4.9	0.8	0.5	4.0	0	0	4.9	0	0	10.2	0	0	4.0	4.9	4.9	0
SLOW(¼)	0	0	4.9	0.8	0.5	4.0	0	0.7	4.9	0	0	10.2	0	0	4.0	4.9	4.9	0

REF.NO.	Q6011			Q6012			Q6014			Q6015			Q6016			Q6017		
MODE	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C
STOP	5.0	4.9	0	5.0	4.8	0.5	0	0	10.8	10.1	10.8	12.2	0	0	4.9	0	0.6	0
FF	4.9	4.9	0	4.9	4.9	0.5	0	0	10.8	10.2	10.8	12.1	0	0	4.9	0	0.6	0
REW	5.0	5.0	0	5.0	4.8	0.5	0	0	10.8	10.2	10.8	12.1	0	0	4.9	0	0.6	0
REC	4.9	4.9	0	4.9	4.9	0.5	0	0	10.8	10.1	10.8	12.1	0	0	4.9	0	0.6	0
PLAY	5.0	4.9	0	5.0	4.9	0.5	0	0	10.8	10.2	10.9	12.2	0	0	4.9.	0	0.6	0
CUE	5.0	4.9	0	5.0	4.9	0.5	0	0	10.8	10.2	10.8	12.2	4.3	4.9	4.9	0	0.6	0
REV	5.0	4.9	0	4.9	4.9	0.5	0	0	10.8	10.2	10.9	12.2	4.2	4.9	4.9	0	0.6	0
F.ADV.	5.0	4.9	0	4.9	4.9	0.5	0	0	10.8	10.2	10.9	12.2	4.2	4.9	4.9	0	0.6	0
SLOW(¼)	5.0	4.9	0	4.9	4.9	0.5	0	0	10.8	10.2	10.9	12.2	4.2	4.9	4.9	0	0.6	0

REF.NO.	Q6018		
MODE	E	B	C
STOP	0	0.6	0
FF	0	0.6	0
REW	0	0.6	0
REC	0	0.6	0
PLAY	0	0.6	0
CUE	0	0.6	0
REV	0	0.6	0
F.ADV.	0	0.6	0
SLOW(¼)	0	0.6	0

REF.NO.	IC2001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	0	0	0	0	0.9	1.8	1.8	0.8	4.9	4.8	4.9	4.9	0	4.9	4.9	1.8	0
REC	0	0	0	0	0	0	0	2.6	2.6	2.6	2.7	4.9	4.8	4.9	4.9	2.1	2.5	4.9	2.6	0
PLAY	0	0	0	0	0	0	0	2.6	2.6	2.6	2.7	0	4.8	4.9	4.9	0.2	2.5	4.9	2.5	0
CUE	0	0	4.9	0	0	0	0	2.6	2.6	2.6	2.7	0	4.8	4.9	4.9	0.2	2.3	4.9	2.6	0
REV	0	0	4.9	0	0	0	0	2.6	2.6	2.6	2.6	0	4.8	4.9	4.9	0	2.3	5.0	2.6	0
F.ADV.	0	0	0	0	0	0	0	1.5	2.6	2.6	1.3	0	4.8	0	4.9	0	★	4.9	2.6	0
SLOW(¼)	0	0	0	0	0	0	0	1.5	2.6	2.6	1.3	0	4.8	0	4.9	0	★	4.9	2.6	0

REF.NO.	IC2002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0.2	2.5	3.0	4.7	0	0	0	4.9	0	0	4.9	0	4.9	1.6	0	0	0	0	0
REC	0	2.5	2.3	3.0	4.7	2.4	4.7	0	4.9	0	0	4.9	0	4.9	1.6	2.1	2.5	0	0	0
PLAY	0	2.5	2.3	2.7	4.7	2.4	0	0	0	0	0	0	0	4.9	1.6	0.2	2.5	0	0	0
CUE	0	3.5	0.3	2.6	4.6	2.3	0	0	0	0	0	0	0	4.9	1.6	0	2.3	0	0	4.9
REV	0	3.5	0.2	2.8	4.7	2.2	0	0	0	0	0	0	0	4.9	1.6	0.2	2.3	4.9	0	4.9
F.ADV.	0	0.5	2.5	2.7	4.5	2.2	0	0	0	0	0	4.9	0	4.9	1.6	0	★	0	0	0
SLNW(¼)	0	0.5	2.5	2.7	4.5	2.3	0	0	0	0	0	4.9	0	4.9	1.6	0	★	0	0	0

REF.NO.	IC2002							
MODE	21	22	23	24	25	26	27	28
STOP	0	0	0	4.9	4.9	0	2.4	0.2
REC	0	4.9	0	3.8	2.4	0	2.5	2.5
PLAY	0	4.8	0	3.8	2.4	0	2.5	2.5
CUE	0	4.9	0	3.8	2.5	0	2.4	2.6
REV	0	4.8	0	3.8	2.5	0	2.6	2.5
F.ADV.	0	0	0	3.8	2.4	0	2.5	2.5
SLOW(¼)	0	0	0	3.8	2.5	0	2.5	2.5

REF.NO.	IC2003																	
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
STOP	0	0.5	1.8	0	2.5	2.5	0	2.5	0	0.8	4.9	0	0	4.9	0	4.9	4.9	0
REC	2.1	−0.2	2.4	0	2.5	2.6	0	2.8	4.7	2.9	4.9	2.4	1.1	2.4	2.8	4.7	3.8	0
PLAY	0	0	1.8	0	2.5	2.5	0	2.5	0	2.8	4.9	2.4	1.1	2.5	2.8	4.8	3.8	0
CUE	0.2	−0.4	1.8	0	2.5	2.5	0	2.5	0	2.9	4.9	2.3	1.1	2.5	2.8	4.7	3.8	0
REV	0	0.5	1.8	0	2.5	2.5	0	2.5	0	2.8	5.0	2.4	1.1	2.5	2.8	4.7	3.8	0
F.ADV.	0	0.4	1.8	0	2.5	2.5	0	2.5	0	2.8	4.9	2.4	1.1	2.5	2.8	4.7	3.8	0
SLOW(¼)	0	0.4	1.8	0	2.5	2.5	0	2.5	0	2.8	4.9	2.4	1.1	2.5	2.8	4.7	3.8	0

REF.NO.	IC2004																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	14.0	14.0	2.5	2.3	0	0.6	12.1	0	11.7	0.8	1.8	0	1.1	0.8	0.5	1.9	1.7	7.0	4.9	4.9
REC	13.6	13.6	2.5	2.3	0	2.0	12.1	0	11.0	0.9	2.6	0	2.5	0.7	0.6	1.8	1.8	3.2	4.7	3.8
PLAY	13.8	13.8	2.5	2.3	0	2.0	12.1	0	11.0	0.9	0	0	2.5	0.7	0.6	1.8	1.8	3.2	4.7	3.8
CUE	13.8	13.8	2.5	2.3	0	2.0	12.2	0	11.1	0.9	2.6	0	2.6	0.7	0.6	1.8	1.8	3.2	4.7	3.8
REV	13.8	13.8	2.6	2.3	0	2.0	12.2	0	11.1	0.9	2.6	0	2.6	0.7	0.6	1.8	1.8	3.2	4.7	3.8
F.ADV.	13.8	13.7	2.5	2.3	0	2.0	12.2	0	11.1	0.9	2.6	0	2.6	0.7	0.6	1.8	1.8	3.2	4.7	3.8
SLOW(¼)	13.8	13.7	2.5	2.3	0	2.0	12.1	0	11.1	0.9	2.6	0	2.6	0.7	0.6	1.8	1.8	3.2	4.7	3.8

REF.NO.	IC2004					IC2005														
MODE	21	22	23	24		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
STOP	14.0	0	14.0	0		0	0	0	0.5	1.0	1.1	4.9	0	0	0	4.2	0	0	2.5	4.9
REC	13.8	0	13.5	0		0	0	0	0.5	2.4	2.5	2.5	0	0	0	4.3	0	0	0	4.9
PLAY	14.0	0	13.7	0		0	0	0	0.5	2.4	2.5	2.5	0	4.6	0	4.3	0	0	0	4.9
CUE	14.0	0	13.7	0		0	0	0	0.5	2.4	2.5	2.5	0	4.6	4.9	4.3	0	0	0	4.9
REV	14.0	0	13.8	0		0	0	0	0.5	2.4	2.5	2.5	0	4.7	4.9	4.3	0	0	4.9	4.9
F.ADV.	14.0	0	13.7	0		0	0	0	4.0	2.4	2.5	0.3	2.3	2.5	0	0	0	0	0	0
SLN	14.0	0	13.7	0		0	0	0	4.0	2.5	2.3	0.3	2.3	2.4	0	0	1.6	0	0	0

REF.NO.	IC2005																			
MODE	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
STOP	0	0	0	4.9	0.2	4.9	0	1.8	0	0	0	0	0	0	0	0	2.8	0	0	0
REC	0	0	0	4.9	0.2	4.9	0	2.6'	0	0	0	0	0	0	2.1	0	2.8	0	2.4	2.5
PLAY	0	0	0	4.9	0.2	4.9	0	2.6	0	0	0	0	0	0	0	0	2.8	0	2.5	2.5
CUE	0	0	0	4.9	0.3	4.9	0	2.6	0	0	0	0	0	0	0	0	2.8	0	2.5	2.5
REV	0	0	0	4.9	0.3	4.9	0	2.6	0	0	0	0	0	0	0	0	2.8	0	2.5	2.5
F.ADV.	0	0	0.3	4.9	0.3	4.9	0	2.6	0	0	0	0	0.2	0	0	0	2.8	0	2.5	2.5
SLOW(¼)	0	0	0.3	4.9	0.3	5.0	0	2.6	0	0	0	2.0	0.2	0	0	0	2.8	0	2.5	2.5

REF.NO.	IC2005								IC2006							
MODE	36	37	38	39	40	41	42		1	2	3	4	5	6	7	8
STOP	4.9	0	0.8	4.8	1.7	4.9	2.1		1.1	1.1	1.1	0	2.4	2.4	2.4	4.9
REC	4.9	0	2.7	4.8	2.5	4.9	0		2.5	2.5	2.5	0	2.4	2.4	2.4	4.9
PLAY	4.9	0	2.7	4.8	2.5	4.9	0		2.5	2.5	2.5	0	2.4	2.5	2.4	4.9
CUE	4.9	0	2.7	4.8	2.5	4.9	0		2.5	2.5	2.5	0	2.4	2.5	2.4	4.9
REV	4.8	0	2.7	4.8	2.5	4.9	4.8		2.5	2.5	2.5	0	2.4	2.5	2.4	4.9
F.ADV.	4.8	0.3	0.4	4.7	2.4	★	0.5		2.5	2.5	2.5	0	2.4	2.5	2.4	4.9
SLOW(¼)	4.8	0.3	0.4	4.6	2.4	★	0.4		2.6	2.5	2.5	0	2.5	2.5	2.4	4.9

REF.NO.	IC2007							
MODE	1	2	3	4	5	6	7	8
STOP	3	0.	2.8	0	1.8	1.8	1.8	4.9
REC	2	2.4	2.2	0	2.6	2.6	2.6	4.9
PLAY	2	2.4	2.3	0	2.6	2.6	2.6	4.9
CUE	2.1	2.4	2.3	0	2.6	2.6	2.6	4.9
REV	2.1	2.4	2.3	0	2.6	2.6	2.6	4.9
F.ADV.	2.1	2.4	2.3	0	2.6	2.6	2.6	4.9
SLOW(¼)	2.1	2.4	2.3	0	2.6	2.6	2.6	4.9

REF.NO.		
MODE	1	2
STOP	0	0
FF	0	0
REW	0	0
REC	0	4.9
PLAY	0	4.9
CUE	0	0
REV	0	0
F.ADV.	0	4.9
SLOW(¼)	0	4.9

REF.NO.		
MODE	21	22
STOP	4.9	0
FF	4.9	0
REW	4.9	0
REC	4.9	0
PLAY	4.9	0
CUE	4.9	0
REV	4.9	0
F.ADV.	4.9	0
SLOW(¼)	4.9	0

REF.NO.		
MODE	41	42
STOP	0	0
FF	0	0
REW	0	0
REC	4.6	0
PLAY	0	0
CUE	0	0
REV	0	0
F.ADV.	0	0
SLOW(¼)	0	0

REF.NO.		IC6001
MODE	61	62
STOP	4.8	2.3
FF	4.8	2.3
REW	4.8	2.3
REC	4.8	2.3
PLAY	4.8	2.3
CUE	4.8	2.3
REV	4.8	2.3
F.ADV.	4.8	2.3
SLOW(¼)	4.8	2.3

REF.NO.		
MODE	1	2
STOP	0	0.6
FF	0	0.6
REW	0	0.6
REC	0	0
PLAY	0	0.6
CUE	0	0.6
REV	0	0.6
F.ADV.	0	0.6
SLOW(¼)	0	0.6

REF.NO.		
MODE	1	2
STOP	8.2	0
REC	8.2	0
PLAY	8.2	0
CUE	8.2	0
REV	8.2	0

REF.NO.		
MODE	1	2
STOP	5.6	5.7
REC	5.6	5.7
PLAY	5.6	5.7

REF.NO.		
MODE	1	2
STOP	7.7	0
REC	7.6	0
PLAY	7.7	0

IC6001 MATRIX CHART OF SYSTEM CONTROL CIRCUIT
VOLTAGE CHART OF MAIN C.B.A.

16	17	18	19	20
0	4.9	4.9	1.8	0
2.1	2.5	4.9	2.6	0
0.2	2.5	4.9	2.5	0
0.2	2.3	4.9	2.6	0
0	2.3	5.0	2.6	0
0	★	4.9	2.6	0
0	★	4.9	2.6	0

16	17	18	19	20
0	0	0	0	0
2.1	2.5	0	0	0
0.2	2.5	0	0	0
0	2.3	0	0	4.9
0.2	2.3	4.9	0	4.9
0	★	0	0	0
0	★	0	0	0

16	17	18		
4.9	4.9	0		
4.7	3.8	0		
4.8	3.8	0		
4.7	3.8	0		
4.7	3.8	0		
4.7	3.8	0		
4.7	3.8	0		

16	17	18	19	20
1.9	1.7	7.0	4.9	4.9
1.8	1.8	3.2	4.7	3.8
1.8	1.8	3.2	4.7	3.8
1.8	1.8	3.2	4.7	3.8
1.8	1.8	3.2	4.7	3.8
1.8	1.8	3.2	4.7	3.8
1.8	1.8	3.2	4.7	3.8

11	12	13	14	15
.2	0	0	2.5	4.9
.3	0	0	0	4.9
.3	0	0	0	4.9
.3	0	0	0	4.9
.3	0	0	4.9	4.9
	0	0	0	0
	1.6	0	0	0

1	32	33	34	35
	2.8	0	0	0
	2.8	0	2.4	2.5
	2.8	0	2.5	2.5
	2.8	0	2.5	2.5
	2.8	0	2.5	2.5
	2.8	0	2.5	2.5
	2.8	0	2.5	2.5

[illegible]				
9				
9				
9				
9				
9				
9				
9				

PV-1530

REF.NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	4.9	4.9	0	0	0	4.9	0	3.6	4.9	4.9	4.9	4.9	4.9	4.9	2.5	3.9	3.5	2.0
FF	0	0	4.9	4.9	0	0	0	4.9	2.8	3.6	4.9	4.9	4.9	4.8	4.8	4.9	2.5	4.0	3.5	2.0
REW	0	0	4.9	4.9	0	0	0	4.9	2.8	3.6	4.9	4.9	4.9	4.9	4.9	4.9	2.5	4.0	3.5	2.0
REC	0	4.9	0	0	0	0	0	4.9	★	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	3.9	3.4	3.1
PLAY	0	4.9	0	0	0	0	0	4.9	★	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	4.0	3.5	3.1
CUE	0	0	4.9	4.9	0	0	0	4.9	2.8	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	4.0	3.5	2.0
REV	0	0	4.9	4.9	0	0	0	4.9	2.8	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	3.9	3.5	3.1
F.ADV.	0	4.9	0	0	0	0	0	4.9	0	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	4.0	3.5	3.1
SLOW(¼)	0	4.9	0	0	0	0	0	4.9	0	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	4.0	3.5	3.1

REF.NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	4.9	0	4.0	0.7	0.6	3.9	3.9	4.0	4.1	4.9	4.9	4.9	4.9	0	4.9	0	0	0	4.9	4.6
FF	4.9	0	4.0	0.7	0.7	4.0	4.0	4.0	4.1	4.9	4.9	4.2	4.9	0	4.9	0	0	0	4.9	4.6
REW	4.9	0	4.0	0.7	0.6	4.0	4.0	4.0	4.1	4.9	4.9	4.9	4.9	0	4.9	0	0	0	4.9	4.6
REC	4.9	0	4.0	0.7	0.6	3.9	3.9	4.0	4.1	4.9	4.9	4.9	4.9	0	4.9	0	4.7	0	4.9	4.6
PLAY	4.9	0	4.0	0.7	0.6	4.0	4.0	4.0	4.1	0	4.9	0	4.9	0	0	0	0	0	4.9	0
CUE	4.9	0	4.0	0.7	0.6	4.0	4.0	4.0	4.1	4.9	4.9	0	4.9	0	4.9	0	0	0	4.9	4.6
REV	4.9	0	4.0	0.7	0.6	4.0	4.0	4.0	4.1	0.6	0	0.6	4.9	0	0	4.8	0	4.9	4.9	0
F.ADV.	4.9	0	4.0	0.7	0.7	4.0	4.0	4.0	4.1	0.6	0	0.6	0.6	0	0	4.8	0	0	4.9	0
SLOW(¼)	4.9	0	4.0	0.7	0.7	4.0	4.0	4.0	4.1	4.9	4.9	4.9	4.9	0	0	4.8	0	0	4.9	0

REF.NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	0	0	0	4.9	0	0	0	4.9	0	0	0	0	0	0	0	4.9	4.9	4.9	4.4
FF	0	0	0	4.9	0	0	0	0	4.9	4.9	0	4.9	0	0	0	0	4.9	4.9	4.9	4.4
REW	0	0	0	4.9	4.9	0	0	0	4.9	4.9	0	4.9	0	0	0	4.9	4.8	4.9	4.9	4.5
REC	4.6	0	0	0	0	0	0	0	4.9	4.8	4.9	0	0	0	0	0	4.8	4.8	4.8	4.4
PLAY	0	0	0	0	0	0	0	0	4.9	4.9	4.9	0	0	0	0	0	0	4.9	4.9	4.5
CUE	0	0	0	4.9	0	0	0	0	4.9	4.9	0	4.9	0	0	0	0	4.8	4.9	4.9	4.5
REV	0	0	0	0	4.9	0	0	0	4.9	4.9	4.9	4.9	0	4.9	0	4.9	0	4.9	4.9	4.5
F.ADV.	0	0	0	0	0	0	0	★	0	0	4.9	0	0	4.9	0	0	0	4.9	4.9	4.4
SLOW(¼)	0	0	0	0	0	0	0	★	0	0	0	0	0	4.9	0	0	0	4.9	4.9	4.4

REF.NO.	IC6001				IC6003															
MODE	61	62	63	64	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
STOP	4.8	2.3	2.4	4.9	0	0	5.0	5.0	0	2.4	2.2	0	0	0	0	0	5.0	0	5.0	5.0
FF	4.8	2.3	2.4	4.9	0	0	5.0	5.0	0	2.4	2.2	0	0	0	0	0	5.0	0	5.0	5.0
REW	4.8	2.3	2.4	4.9	0	0	5.0	5.0	0	2.4	2.2	0	0	0	0	4.9	5.0	0	5.0	5.0
REC	4.8	2.3	2.4	4.9	0	0	5.0	5.0	0	2.4	2.2	0	0	0	0	0	5.0	0	5.0	5.0
PLAY	4.8	2.3	2.4	4.9	0	0	5.0	5.0	0	2.4	2.2	0	0	0	0	0	5.0	0	5.0	5.0
CUE	4.8	2.3	2.4	4.9	0	0	0	5.0	0	0	2.2	0	5.0	0	0	0	0	0	5.0	5.0
REV	4.8	2.3	2.4	4.9	0	0	0	5.0	0	2.4	2.2	0	0	5.0	0	0	3.9	0	5.0	5.0
F.ADV.	4.8	2.3	2.4	4.9	0	0	0	5.0	0	2.4	2.2	0	0	5.0	0	0	3.9	0	5.0	5.0
SLOW(¼)	4.8	2.3	2.4	4.9	0	0	5.0	5.0	0	2.4	2.2	0	0	0	0	0	5.0	0	5.0	5.0

REF.NO.	IC6004										IC6005									
MODE	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
STOP	0	0.6	0.9	1.0	0	0	10.1	14.0	0.9	0.6	0	0.6	0	0	0	0	12.1	14.0	0.9	0.6
FF	0	0.6	0.9	0.8	0	0	10.2	14.0	0.9	0.6	0	0.6	0	0	0	0	12.1	14.0	0.9	0.6
REW	0	0.6	0.9	0.7	0	0	10.1	13.9	0.9	0.6	0	0.6	0.9	0.8	0	0	12.1	13.9	0.9	0.6
REC	0	0	0.9	0.7	0	0	10.1	13.9	0.9	0.6	0	0.6	0.9	0.8	0	0	12.1	13.9	0.9	0.6
PLAY	0	0.6	0.9	0.9	0	0	10.2	14.0	0.9	0.6	0	0.6	0.9	0.9	0	0	12.1	14.0	0.9	0.6
CUE	0	0.6	0.9	1.3	0	0	10.2	14.0	0.9	0.6	0	0.6	0.9	1.3	0	0	12.1	14.0	0.9	0.6
REV	0	0.6	0.9	1.3	0	0	10.1	14.0	0.9	0.6	0	0.6	0.9	1.3	0	0	12.1	14.0	0.9	0.6
F.ADV.	0	0.6	0.9	1.2	0	0	10.2	14.0	0.9	0.6	0	0.6	0.9	1.2	0	0	12.1	14.0	0.9	0.6
SLOW(¼)	0	0.6	0.9	1.2	0	0	10.2	14.0	0.9	0.6	0	0.6	0.9	1.2	0	0	12.2	14.0	0.9	0.6

REF.NO.	IC3201										IC4701									
MODE	1	2	3	4	5	6	7	8	9		1	2	3	4	5	6	7	8		
STOP	8.2	0	8.2	0	0	8.2	0	7.4	11.9		5.6	5.7	5.7	0	5.7	5.7	5.6	11.1		
REC	8.2	0	8.2	0	0	8.2	0	7.3	11.9		5.6	5.7	5.7	0	5.7	5.7	5.6	11.1		
PLAY	8.2	0	8.2	0	0	8.3	9.1	7.4	11.9		5.6	5.7	5.7	0	5.7	5.7	5.6	11.1		
CUE	8.2	0	8.2	0	0	8.2	9.1	7.4	11.9											
REV	8.2	0	8.2	0	0	8.2	9.1	7.4	11.9											

REF.NO.	IC4702									IC4703										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7				
STOP	5.6	5.7	5.7	0	5.7	5.7	5.6	11.1		7.7	0	7.7	0	7.2	6.9	11.1				
REC	5.6	5.7	5.7	0	5.7	5.7	5.6	11.1		7.7	0	7.6	0	7.1	6.8	11.0				
PLAY	5.6	5.7	5.7	0	5.7	5.7	5.6	11.1		7.7	0	7.7	0	7.2	6.9	11.1				

REF.NO.	IC4704								IC4705											
MODE	1	2	3	4	5	6	7		1	2	3	4	5	6	7	8	9			
STOP	7.7	0	7.7	0	7.1	6.9	11.1		11.1	5.6	5.6	5.6	0	5.6	5.6	5.6	11.0			
REC	7.6	0	7.6	0	7.1	6.8	11.0		11.0	5.6	5.6	5.5	0	5.5	5.6	5.6	11.0			
PLAY	7.7	0	7.7	0	7.2	6.9	11.1		11.1	5.6	5.6	5.6	0	5.6	5.6	5.6	11.0			

PV-1525

REF.NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	4.9	4.9	0	0	0	4.9	0	3.6	4.9	4.9	4.9	4.9	4.9	4.9	2.5	3.9	3.5	2.0
FF	0	0	4.9	4.9	0	0	0	4.9	2.8	3.6	4.9	4.9	4.9	4.8	4.8	4.9	2.5	4.0	3.5	2.0
REW	0	0	4.9	4.9	0	0	0	4.9	2.8	3.6	4.9	4.9	4.9	4.9	4.9	4.9	2.5	4.0	3.5	2.0
REC	0	4.9	0	0	0	0	0	4.9	★	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	3.9	3.4	3.1
PLAY	0	4.9	0	0	0	0	0	4.9	★	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	4.0	3.5	3.1
CUE	0	0	4.9	4.9	0	0	0	4.9	2.8	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	4.0	3.5	2.0
REV	0	0	4.9	4.9	0	0	0	4.9	2.8	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	3.9	3.5	3.1
F.ADV.	0	4.9	0	0	0	0	0	4.9	0	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	4.0	3.5	3.1
SLOW(¼)	0	4.9	0	0	0	0	0	4.9	0	3.6	4.9	4.9	4.9	4.8	4.9	4.9	2.5	4.0	3.5	3.1

REF.NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	4.9	0	4.0	0.7	0.6	3.9	3.9	4.0	4.1	4.9	4.9	4.9	4.9	0	4.9	0	0	0	4.9	4.6
FF	4.9	0	4.0	0.7	0.7	4.0	4.0	4.0	4.1	4.9	4.9	4.2	4.9	0	4.9	0	0	0	4.9	4.6
REW	4.9	0	4.0	0.7	0.6	4.0	4.0	4.0	4.1	4.9	4.9	4.9	4.9	0	4.9	0	0	0	4.9	4.6
REC	4.9	0	4.0	0.7	0.6	3.9	3.9	4.0	4.1	4.9	4.9	4.9	4.9	0	4.9	0	4.7	0	4.9	4.6
PLAY	4.9	0	4.0	0.7	0.6	4.0	4.0	4.0	4.1	0	4.9	0	4.9	0	0	0	0	0	4.9	0
CUE	4.9	0	4.0	0.7	0.6	4.0	4.0	4.0	4.1	4.9	4.9	0	4.9	0	4.9	0	0	0	4.9	4.6
REV	4.9	0	4.0	0.7	0.6	4.0	4.0	4.0	4.1	0.6	0	0.6	4.9	0	0	4.8	0	4.9	4.9	0
F.ADV.	4.9	0	4.0	0.7	0.7	4.0	4.0	4.0	4.1	0.6	0	0.6	0.6	0	0	4.8	0	0	4.9	0
SLOW(¼)	4.9	0	4.0	0.7	0.7	4.0	4.0	4.0	4.1	4.9	4.9	4.9	4.9	0	0	4.8	0	0	4.9	0

REF.NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	0	0	0	4.9	0	0	0	4.9	0	0	0	0	0	0	0	4.9	4.9	4.9	4.4
FF	0	0	0	4.9	0	0	0	0	4.9	4.9	0	4.9	0	0	0	0	4.9	4.9	4.9	4.4
REW	0	0	0	4.9	4.9	0	0	0	4.9	4.9	0	4.9	0	0	0	4.9	4.8	4.9	4.9	4.5
REC	4.6	0	0	0	0	0	0	0	4.9	4.8	4.9	0	0	0	0	0	4.8	4.8	4.8	4.4
PLAY	0	0	0	0	0	0	0	0	4.9	4.9	4.9	0	0	0	0	0	0	4.9	4.9	4.5
CUE	0	0	0	4.9	0	0	0	0	4.9	4.9	0	4.9	0	0	0	0	4.8	4.9	4.9	4.5
REV	0	0	0	0	4.9	0	0	0	4.9	4.9	4.9	4.9	0	4.9	0	4.9	0	4.9	4.9	4.5
F.ADV.	0	0	0	0	0	0	0	★	0	0	4.9	0	0	4.9	0	0	0	4.9	4.9	4.4
SLOW(¼)	0	0	0	0	0	0	0	★	0	0	0	0	0	4.9	0	0	0	4.9	4.9	4.4

REF.NO.	IC6001				IC6002															
MODE	61	62	63	64		1	2	3	4	5	6	7	8							
STOP	4.8	2.3	2.4	4.9		0	4.9	3.2	0	1.1	4.9	0	5.0							
FF	4.8	2.3	2.4	4.9		0	4.9	3.2	0	1.1	4.9	0	5.0							
REW	4.8	2.3	2.4	4.9		0	4.9	3.2	0	1.1	4.9	0	5.0							
REC	4.8	2.3	2.4	4.9		0	4.9	3.2	0	1.1	4.9	0	4.9							
PLAY	4.8	2.3	2.4	4.9		0	4.9	3.2	0	1.1	4.9	0	4.9							
CUE	4.8	2.3	2.4	4.9		0	4.9	3.2	0	1.1	4.9	0	4.9							
REV	4.8	2.3	2.4	4.9		0	4.9	3.2	0	1.1	4.9	0	4.9							
F.ADV.	4.8	2.3	2.4	4.9		0	4.9	3.2	0	1.1	4.9	0	4.9							
SLOW(¼)	4.8	2.3	2.4	4.9		0	4.9	3.2	0	1.1	4.9	0	4.9							

REF.NO.	IC6004										IC6005									
MODE	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
STOP	0	0.6	0.9	1.0	0	0	10.1	14.0	0.9	0.6	0	0.6	0	0	0	0	12.1	14.0	0.9	0.6
FF	0	0.6	0.9	0.8	0	0	10.2	14.0	0.9	0.6	0	0.6	0	0	0	0	12.1	14.0	0.9	0.6
REW	0	0.6	0.9	0.7	0	0	10.1	13.9	0.9	0.6	0	0.6	0.9	0.8	0	0	12.1	13.9	0.9	0.6
REC	0	0	0.9	0.7	0	0	10.1	13.9	0.9	0.6	0	0.6	0.9	0.8	0	0	12.1	13.9	0.9	0.6
PLAY	0	0.6	0.9	0.9	0	0	10.2	14.0	0.9	0.6	0	0.6	0.9	0.9	0	0	12.1	14.0	0.9	0.6
CUE	0	0.6	0.9	1.3	0	0	10.2	14.0	0.9	0.6	0	0.6	0.9	1.3	0	0	12.1	14.0	0.9	0.6
REV	0	0.6	0.9	1.3	0	0	10.1	14.0	0.9	0.6	0	0.6	0.9	1.3	0	0	12.1	14.0	0.9	0.6
F.ADV.	0	0.6	0.9	1.2	0	0	10.2	14.0	0.9	0.6	0	0.6	0.9	1.2	0	0	12.1	14.0	0.9	0.6
SLOW(¼)	0	0.6	0.9	1.2	0	0	10.2	14.0	0.9	0.6	0	0.6	0.9	1.2	0	0	12.2	14.0	0.9	0.6

VOLTAGE MEASUREMENT:

1. CUE, REVIEW, FRAME ADVANCE.
   COLOR BAR SIGNAL IN SLP MODE.
2. OTHERS
   COLOR BAR SIGNAL IN SP MODE.

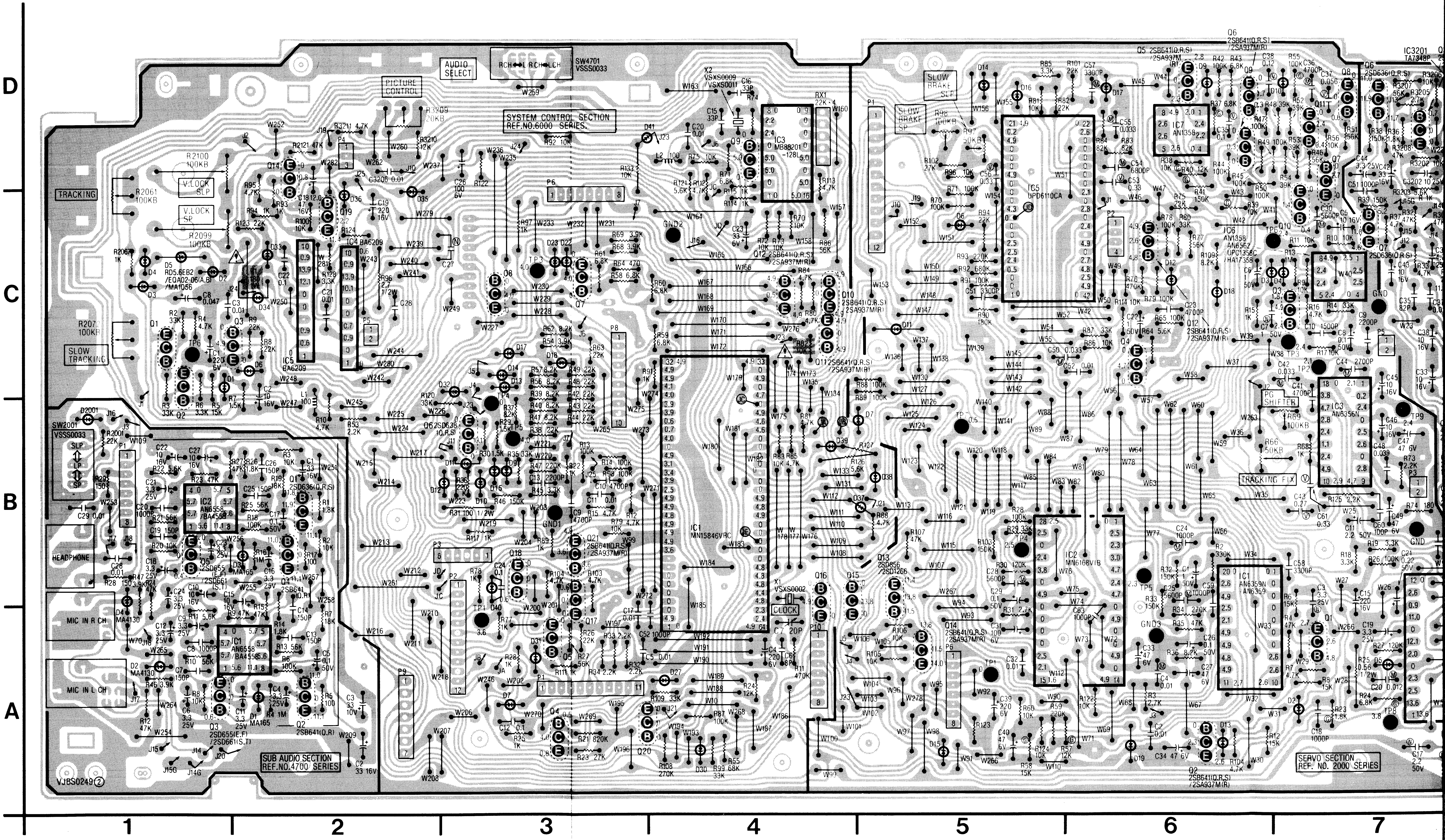
★ : UNMEASURABLE OR UNNECESSARY TO MEASURE.

MAIN C.B.A. VEPS0249B1 (PV-1530)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL IN SP REC MODE.

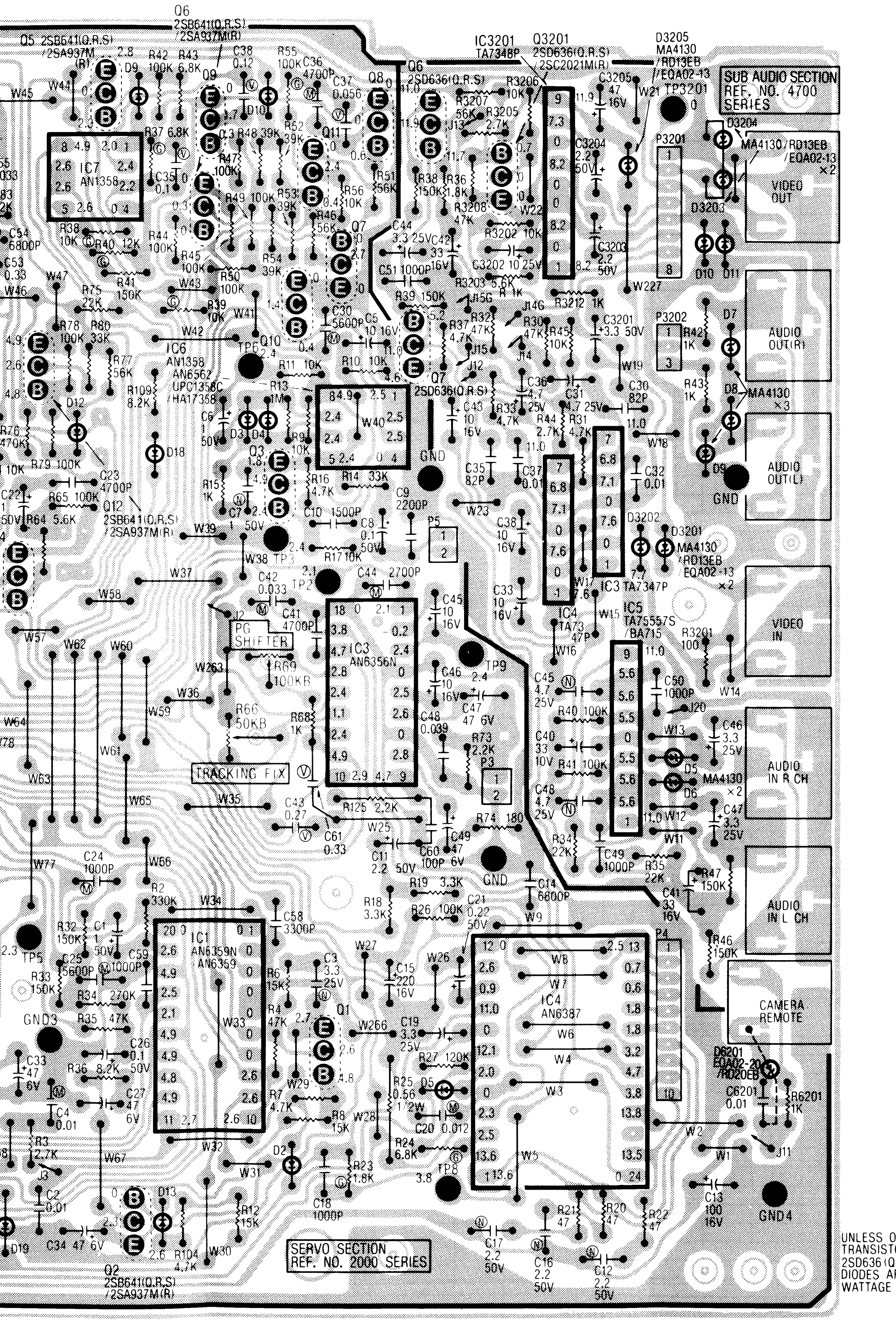
SPECIAL N
ALL INTEG
ELECTROST
HANDLING
(ES) DEVIC



D
C
B
A
1
2
3
4
5
6
7
TRACKING
V.LOCK SLP
V.LOCK SP
SLOW TRACKING
PICTURE CONTROL
AUDIO SELECT
RCH◄►LCH
SW4701 VSSS0033
SYSTEM CONTROL SECTION REF.NO.6000 SERIES
SLOW BRAKE SLP
SLOW BRAKE SP
SW2001 VSSS0033
SLP
LP
SP
HEADPHONE
MIC IN R CH
MIC IN L CH
VJBS0249②
SUB AUDIO SECTION REF.NO.4700 SERIES
IC1 AN6558/BA4558
IC2 AN6558/BA4558
IC4 BA6209
IC5 BA6209
IC1 MN15846VRC
IC3 MB88201-128L
X2 VSXS0009/VSXS0011
X1 VSXS0002
CLOCK
IC5 UPD6110CA
IC7 AN1358
IC6 AN1358/AN6562/UPC1358C/HA17358
IC2 MN6168VIB
IC1 AN6359N/AN6359
IC3 AN6356N
IC3201 TA7348P
PG SHIFTER
TRACKING FIX
SERVO SECTION REF. NO. 2000 SERIES
GND1
GND2
GND3
GND
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9

MENT: COLOR BAR SIGNAL
IN SP REC MODE.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


SUB AUDIO SECTION REF. NO. 4700 SERIES
SERVO SECTION REF. NO. 2000 SERIES
VIDEO OUT
AUDIO OUT(R)
AUDIO OUT(L)
VIDEO IN
AUDIO IN R CH
AUDIO IN L CH
CAMERA REMOTE
TRACKING FIX
PG SHIFTER
IC1 AN6359N
IC3 AN6356N
IC4 AN6387
IC5 TA75557S BA715
IC6 AN1358 AN6562 UPC1358C /HA17358
IC7 AN1358
IC3201 TA7348P
GND
GND4
6
7
8

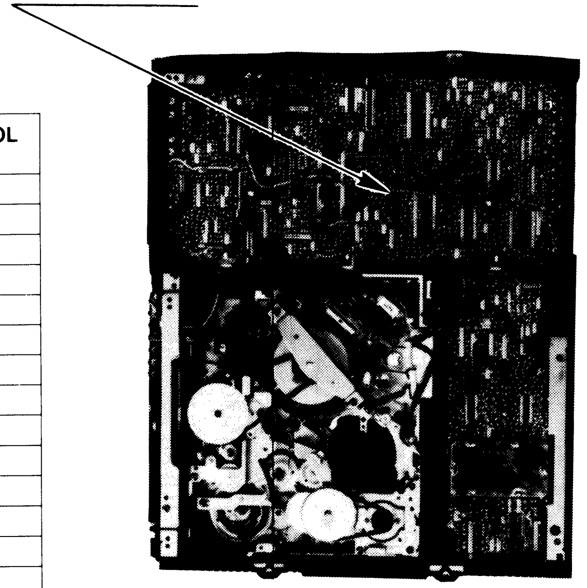
UNLESS OTHERWISE SPECIFIED;
TRANSISTORS ARE
2SD636(Q.R.S)/2SC2021M(R.S),
DIODES ARE MA165/1SS119 AND
WATTAGE OF RESISTORS ARE 1/4W.

SYSTEM CONTROL SECTION	
Q1	C-1
Q2	B-1
Q3	C-1
Q4	A-3
Q5	A-3
Q6	B-3
Q7	C-3
Q8	C-3
Q10	C-4
Q11	C-4
Q12	C-4
Q14	D-2
Q16	B-4
Q17	B-3
Q18	B-3
Q20	A-3
Q21	B-3

SERVO SECTION	
Q1	A-7
Q2	A-6
Q3	C-7
Q4	C-6
Q5	D-6
Q6	D-6
Q7	D-7
Q8	D-7
Q9	D-6
Q10	C-7
Q11	D-7
Q12	C-6
Q13	B-5
Q14	A-5
Q15	B-4

SUB AUDIO SECTION	
Q1	B-2
Q2	A-2
Q3	A-1
Q4	B-2
Q5	B-1
Q6	D-7
Q7	C-7
Q3201	D-7

MAIN C.B.A.



P2001

1	EXCEPT PB Ⓗ
2	EE/VV EE Ⓗ
3	LP/SLP Ⓗ
4	SLP Ⓗ
5	CUE/REVIEW/SS Ⓗ
6	DELAY REC Ⓗ
7	PB Ⓗ
8	3.58MHz
9	HEAD SW
10	PICTURE CTL
11	VSS
12	ROTARY SW

P2002

1	V PULSE
2	V LOCK
3	ENV DET
4	HEAD SW

P2003

1	CONTROL HEAD
2	GND

P2004

1	GND
2	VH+
3	$\overline{\text{HEM}}$
4	HEM
5	$\overline{\text{HES}}$
6	HES
7	MAIN COIL 3
8	MAIN COIL 2
9	VM
10	MAIN COIL 1

P2005

1	CAP Ⓜ FG
2	GND

P2006

1	ERROR
2	FORWARDⓁ/STOPⓂ/REVERSE
3	+5V
4	REF VOLTAGE
5	+5V
6	VM
7	GND
8	TL

P3201

1	GND
2	VIDEO
3	GND
4	VIDEO
5	GND
6	VIDEO
7	AUDIO
8	GND

P3202

1	AUDIO HEAD R CH
2	GND
3	AUDIO HEAD L CH

P4701

1	AUDIO HEAD R CH Ⓗ
2	AUDIO HEAD L CH Ⓗ
3	HEAD PHONE L CH
4	HEAD PHONE R CH
5	GND
6	AUDIO HEAD L CH
7	GND
8.	AUDIO HEAD R CH

P6001

1	DEW SENSOR
2	SENSOR LED PULSE
3	+5V
4	REEL SENSOR
5	POSITION 1
6	POSITION 3
7	POSITION 2
8	
9	SEFETY TAB SW
10	GND
11	UNSWITCH +12V

P6002

1	COUNTER RESET
2	TIMER +5V
3	TV/VCR SW
4	SERIAL DATA
5	SERIAL CLOCK
6	349KHz
7	TIMER SET
8	TIMER REC
9	SAFETY TAB SW
10	IC7501 RESET
11	AUDIO INPUT SELECT
12	VIDEO INPUT SELECT

P6003

1	DATA 9
2	DATA 8
3	DATA 10
4	DOLBY ON Ⓗ
5	AUDIO INPUT SELECT
6	VIDEO INPUT SELECT

P6005

1	LOADINGⓂUNLOADINGⒽ
2	LOADINGⓂLOADINGⒽ

P6006

1	CASSETTEⓂUNLOADINGⒽ
2	CASSETTEⓂLOADINGⒽ
3	SUPPLY PHOTO TR
4	GND
5	CASSETTE IN SW
6	CASSETTE DOWN SW
7	TAKEUP PHOTO TR

P6008

1	GND
2	TV/VCR SW
3	IR POWER SW
4	SCAN 1
5	SCAN 2
6	DATA IN 11
7	DATA IN 10
8	DATA IN 9
9	DATA IN 8

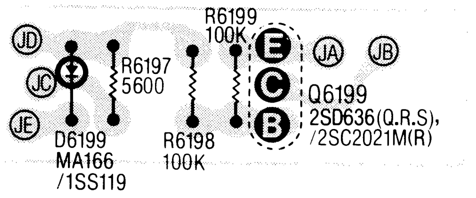
P6009

1	UNSWITCH +12V
2	GND
3	+5V
4	+14V
5	+12V
6	POWER ON Ⓛ
7	GND

P6010

1	AUDIO MUTE Ⓗ
2	AUDIO DELAY REC Ⓗ
3	+12V
4	SLP Ⓗ
5	LP/SLP Ⓗ
6	AUDIO EE Ⓗ
7	DOLBY ON Ⓗ

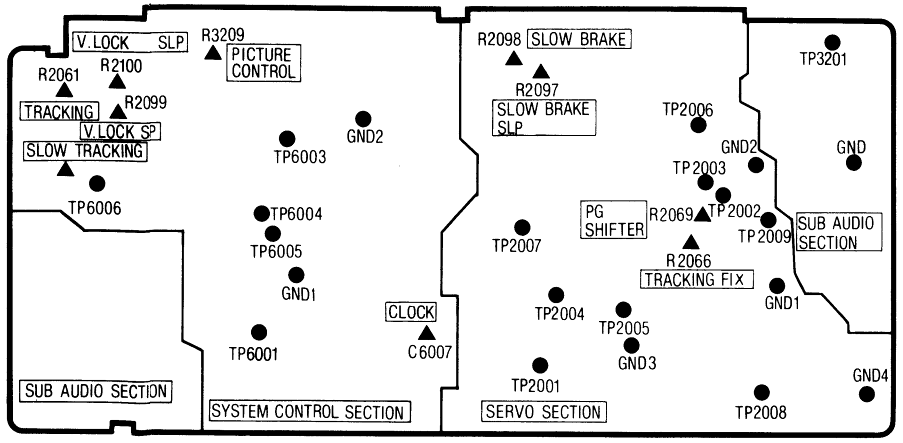
SUB SYSTEM CONTROL (II) C.B.A.


R6199
100K
JD
JC
JE
JA
JB
R6197
5600
Q6199
2SD636(Q.R.S),
/2SC2021M(R)
D6199
MA166
/1SS119
R6198
100K

VJBS00257⑳

SUB SYSTEM CONTROL(II) C.B.A.	MAIN C.B.A.
JA	JA
JB	JB
JC	JC
JD	JD
JE	JE

LOCATION OF TEST POINTS & ADJUSTMENT POINTS


V.LOCK SLP
R3209
PICTURE CONTROL
R2061
R2100
TRACKING
R2099
V.LOCK SP
SLOW TRACKING
TP6006
TP6003
GND2
TP6004
TP6005
GND1
TP6001
CLOCK
C6007
SUB AUDIO SECTION
SYSTEM CONTROL SECTION
R2098
SLOW BRAKE
R2097
SLOW BRAKE SLP
TP2006
TP2003
GND2
TP2002
PG SHIFTER
R2069
R2066
TRACKING FIX
TP2007
TP2004
TP2005
GND3
TP2001
SERVO SECTION
TP2008
TP3201
GND
SUB AUDIO SECTION
TP2009
GND1
GND4

P2001

1	EXCEPT PBⒽ
2	EE/VV EE Ⓗ
3	LP/SLP Ⓗ
4	SLP Ⓗ
5	CUE/REVIEW/SSⒽ
6	DELAY REC Ⓗ
7	PB Ⓗ
8	3.58MHz
9	HEAD SW
10	PICTURE CTL
11	VSS
12	ROTA SW

P2002

1	V PULSE
2	V LOCK
3	ENV DET
4	HEAD SW

P2003

1	CONTROL HEAD
2	GND

P2004

1	GND
2	VH +
3	HEM
4	HEM
5	HES
6	HES
7	MAIN COIL 3
8	MAIN COIL 2
9	VM
10	MAIN COIL 1

P2005

1	CAP Ⓜ FG
2	GND

P2006

1	ERROR
2	FORWARDⓁ/STOPⓂ
3	+5V/REVERSⒽ
4	REF VOLTAGE
5	+5V
6	VM
7	GND
8	TL

P6001

1	DEW SENSOR
2	SENSOR LED PULSE
3	+5V
4	REEL SENSOR
5	POSITION 1
6	POSITION 3
7	POSITION 2
8	
9	SEFETY TAB SW
10	GND
11	UNSWITCH +12V

P6002

1	COUNTER RESET
2	TIMER +5V
3	TV/VCR SW
4	SERIAL DATA
5	SERIAL CLOCK
6	349KHz
7	TIMER SET
8	TIMER REC
9	SAFETY TAB SW
10	IC7501 RESET
11	AUDIO INPUT SELECT
12	VIDEO INPUT SELECT

P6003

1	
2	AUDIO DUB
3	MEMORY COUNTER
4	DOLBY Ⓗ
5	IR CH DOWN
6	IR CH UP

P6005

1	LOADINGⓂUNLOADINGⒽ
2	LOADINGⓂLOADINGⒽ

P6006

1	CASSETTEⓂUNLOADINGⒽ
2	CASSETTEⓂLOADINGⒽ
3	SUPPLY PHOTO TR
4	GND
5	CASSETTE IN SW
6	CASSETTE DOWN SW
7	TAKEUP PHOTO TR

P6008

1	GND
2	TV/VCR SW
3	POWER SW
4	SCAN 1
5	SCAN 2
6	DATA IN 11
7	DATA IN 10
8	DATA IN 9
9	DATA IN 8
10	

P6009

1	UNSWITCH +12V
2	GND
3	+5V
4	+14V
5	+12V
6	POWER ON Ⓛ
7	GND

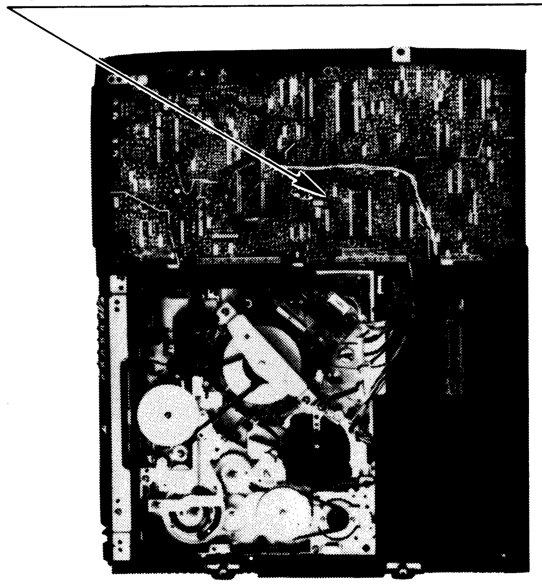
P3201

1	VIDEO
2	GND
3	VIDEO
4	GND
5	VIDEO
6	GND
7	AUDIO
8	AUDIO

P4001

1	AUDIO HEAD R CHⒽ
2	AUDIO HEAD L CHⒽ
3	GND
4	AUDIO ERASE HEAD

SERVO/AUDIO/SYSTEM CONTROL C.B.A.

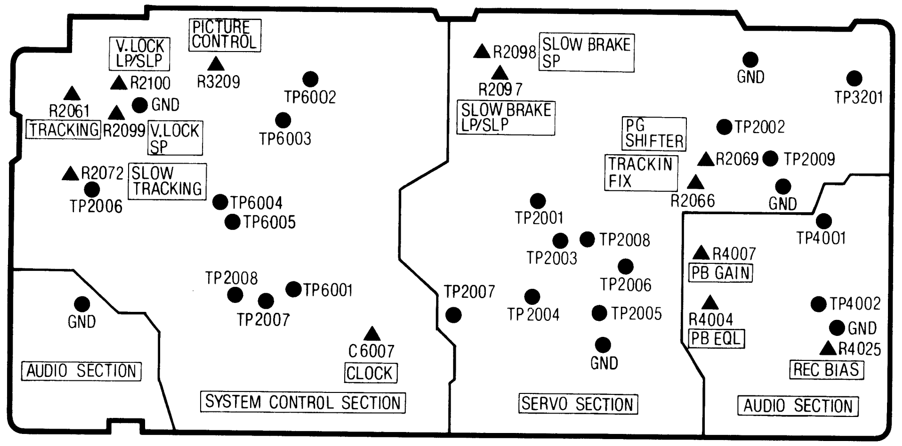


SERVO SECTON	
Q1	B-6
Q2	C-6
Q3	C-6
Q4	C-5
Q5	D-6
Q6	D-6
Q7	C-7
Q8	D-7
Q9	D-6
Q10	C-7
Q11	D-7
Q12	D-5
Q13	B-5
Q14	A-5
Q15	B-5

SYSTEM CONTROL SECTION	
Q3	B-1
Q4	A-3
Q5	A-3
Q6	B-2
Q7	C-3
Q10	C-4
Q11	C-4
Q12	C-4
Q14	C-2
Q20	A-3
Q21	B-3

AUDIO SECTION	
Q1	A-7
Q2	A-7
Q3	A-7
Q4	A-7
Q6	B-7
Q7	A-7
Q4701	A-1
Q4702	A-2
Q3201	C-7
Q3202	C-7

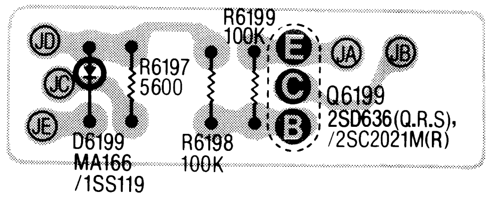
LOCATION OF TEST POINTS & ADJUSTMENT POINTS


V.LOCK LP/SLP
PICTURE CONTROL
R2100
R3209
TP6002
R2061
GND
TRACKING
R2099
V.LOCK SP
TP6003
R2072
SLOW TRACKING
TP2006
TP6004
TP6005
TP2008
TP6001
TP2007
GND
C6007
CLOCK
AUDIO SECTION
SYSTEM CONTROL SECTION
R2098
SLOW BRAKE SP
R2097
SLOW BRAKE LP/SLP
PG SHIFTER
TRACKIN FIX
TP2002
R2069
TP2009
R2066
GND
TP3201
TP2001
TP2003
TP2008
TP2006
TP2007
TP2004
TP2005
GND
SERVO SECTION
R4007
PB GAIN
R4004
PB EQL
TP4001
TP4002
GND
R4025
REC BIAS
AUDIO SECTION

SUB SYSTEM CONTROL (II) C.B.A.

SUB SYSTEM → MAIN C.B.A
CONTROL (II)
C.B.A

JA —— JA
JB —— JB
JC —— JC
JD —— JD
JE —— JE

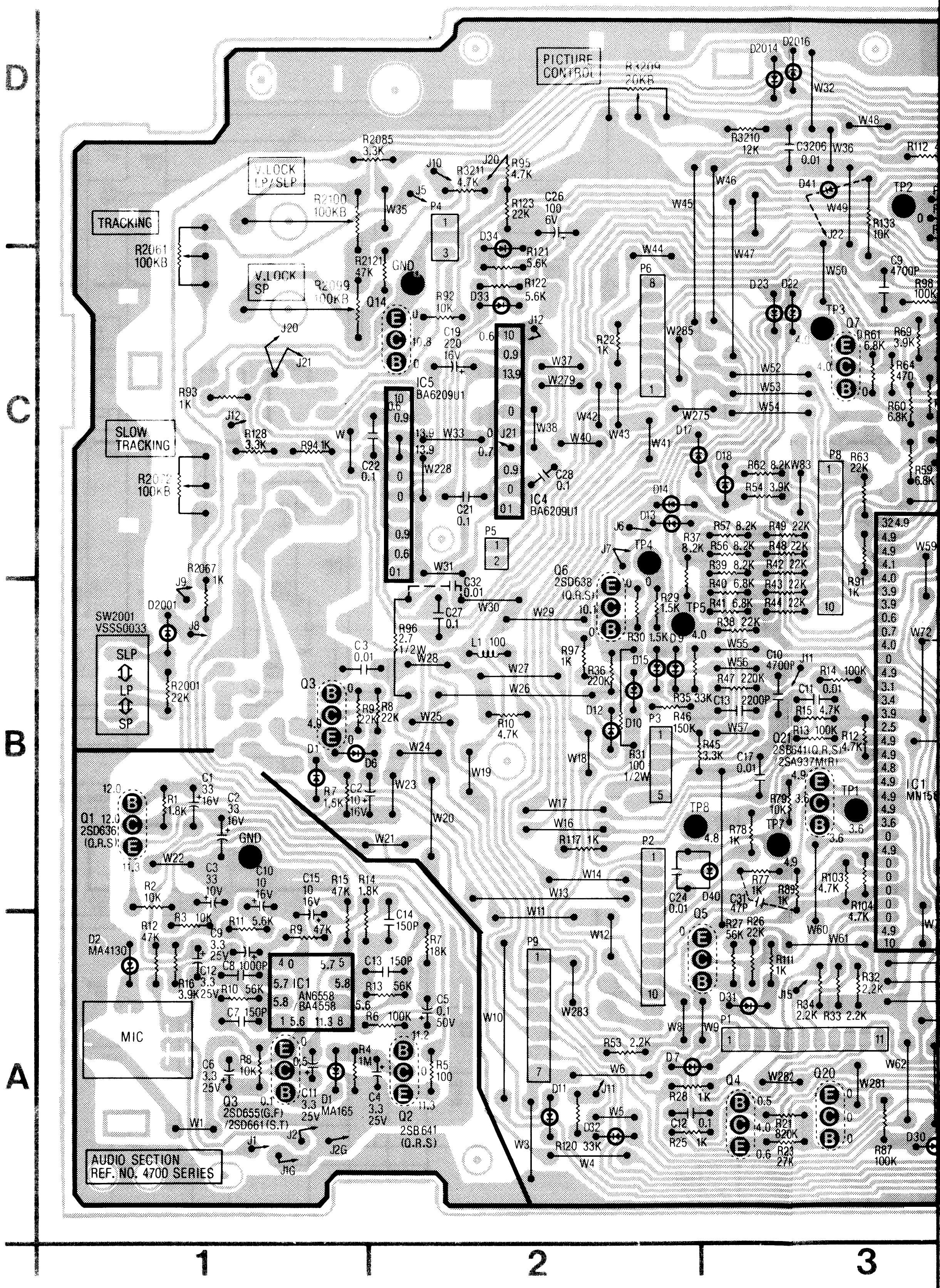

JD
JC
JE
R6199
100K
R6197
5600
E
C
B
JA
JB
Q6199
2SD636(Q.R.S),
/2SC2021M(R)
D6199
MA166
/1SS119
R6198
100K

VJBS00257⑳

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

MAIN C.B.A. VEPS0250H1 (PV-1525)

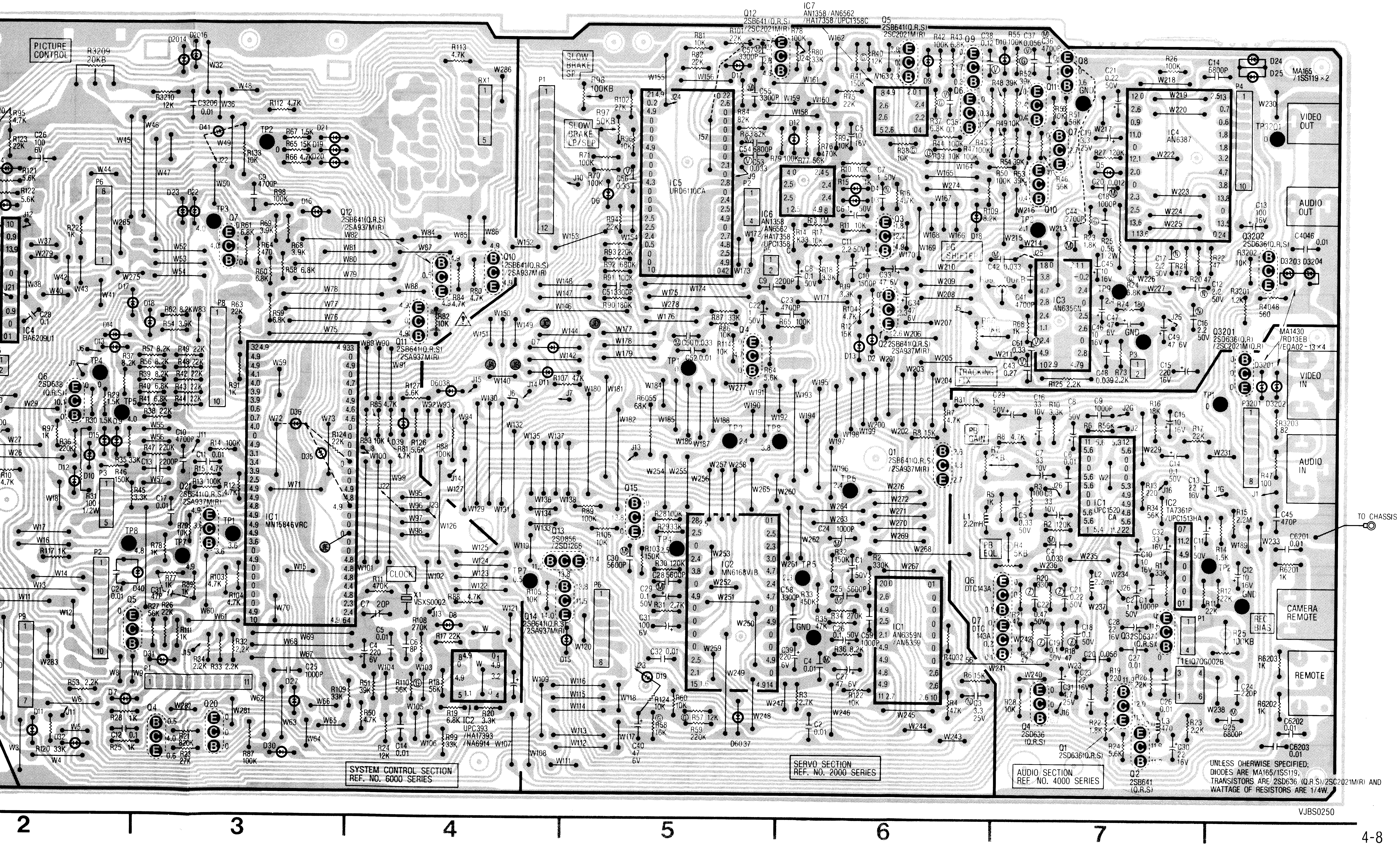
IMPORTA
COMPONE
CHARACTE
WHEN RE
SPECIFIED


D
C
B
A
1
2
3
PICTURE CONTROL
TRACKING
V.LOCK LP/SLP
V.LOCK SP
SLOW TRACKING
SW2001 VSS0033
SLP
LP
SP
MIC
IC5 BA6209U1
IC4 BA6209U1
IC1 AN6558 BA4558
Q1 2SD636 (Q.R.S)
Q3 2SD655(G.F) /2SD661(S.T)
Q2 2SB641 (Q.R.S)
Q6 2SD638 (Q.R.S)
Q21 2SB641(Q.R.S) 2SA937M(R)
AUDIO SECTION REF. NO. 4700 SERIES
TP1
TP2
TP3
TP4
TP5
TP7
TP8
GND

(PV-1525)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL IN SP REC MODE


PICTURE CONTROL
SLOW BRAKE SP
SLOW BRAKE LP/SLP
IC1 MN15846VRC
IC4 BA6209U1
IC5 UR06110CA
IC6 AN1358 /AN6562 /HA17358 /UPC1358C
IC7 AN1358/AN6562 /HA17358/UPC1358C
IC2 MN6168VIB
IC1 AN6359N /AN6359
IC3 AN6356N
IC4 AN6387
IC1 UPC1520 CA
IC2 TA7361P /UPC1513HA
IC2 UPC393 /HA17393 /NA6914
CLOCK
X1 VSXS0002
FG SHIFTER
TRACKING FIX
PB GAIN
PB EQL
REC BIAS
VIDEO OUT
AUDIO OUT
VIDEO IN
AUDIO IN
CAMERA REMOTE
REMOTE
TO CHASSIS
SYSTEM CONTROL SECTION REF. NO. 6000 SERIES
SERVO SECTION REF. NO. 2000 SERIES
AUDIO SECTION REF. NO. 4000 SERIES
2
3
4
5
6
7

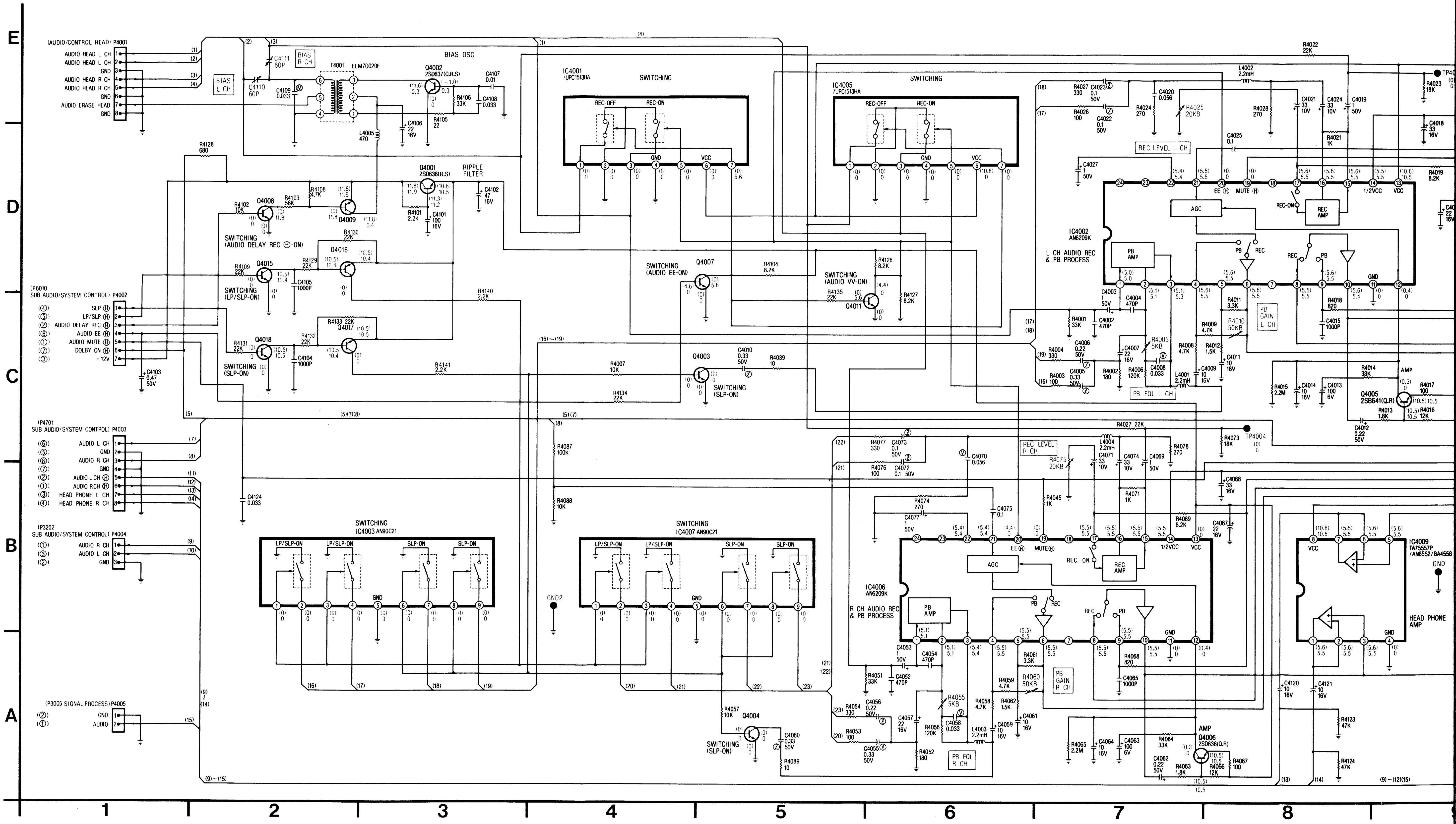
UNLESS OHERWISE SPECIFIED:
DIODES ARE MA165/1SS119,
TRANSISTORS ARE 2SD636 (Q.R.S)/2SC2021M(R) AND
WATTAGE OF RESISTORS ARE 1/4W.

VJBS0250

AUDIO SCHEMATIC DIAGRAM (PV-1530)

VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRACKET.

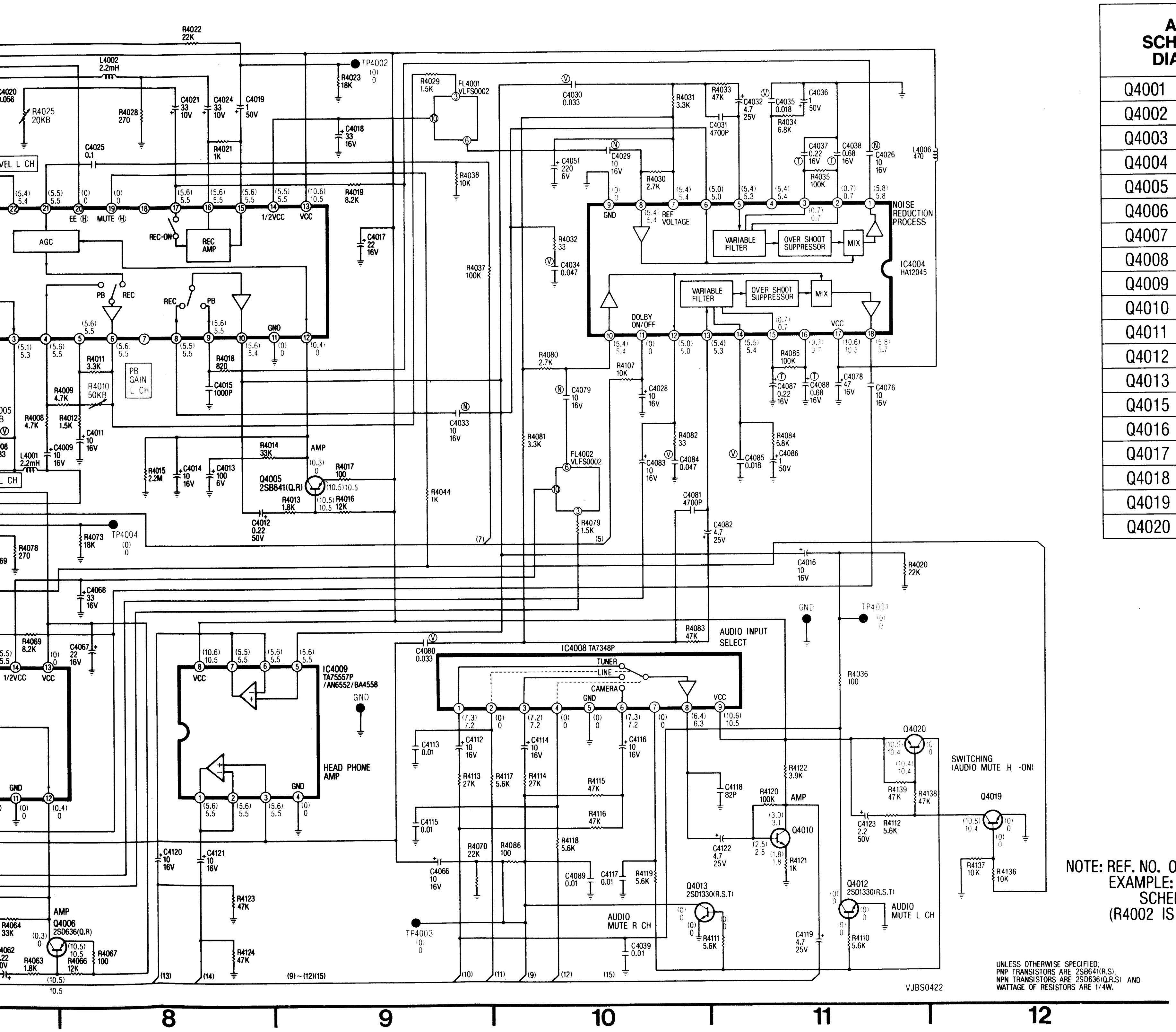
CALLOUTS NEXT TO WIRING PLUG
CONNECTIONS TO OTHER SCHEMAT



E
D
C
B
A
1
2
3
4
5
6
7
8
(AUDIO/CONTROL HEAD) P4001
AUDIO HEAD L CH
AUDIO HEAD L CH
GND
AUDIO HEAD R CH
AUDIO HEAD R CH
GND
AUDIO ERASE HEAD
GND
BIAS L CH
BIAS R CH
C4111 60P
C4110 60P
C4109 0.033
T4001 ELM70020E
L4005 470
BIAS OSC
Q4002 2SD637(Q,R,S)
C4107 0.01
R4106 33K
C4108 0.033
R4105 22
C4106 22 16V
R4128 680
Q4001 2SD636(R,S)
RIPPLE FILTER
C4102 47 16V
R4101 2.2K
C4101 100 16V
R4102 10K
Q4008
R4103 56K
R4108 4.7K
Q4009
SWITCHING (AUDIO DELAY REC Ⓗ-ON)
R4130 22K
Q4016
R4109 22K
Q4015
R4129 22K
C4105 1000P
SWITCHING (LP/SLP-ON)
R4140 2.2K
R4133 22K
Q4017
R4131 22K
Q4018
R4132 22K
C4104 1000P
SWITCHING (SLP-ON)
R4141 2.2K
(P6010 SUB AUDIO/SYSTEM CONTROL) P4002
SLP Ⓗ
LP/SLP Ⓗ
AUDIO DELAY REC Ⓗ
AUDIO EE Ⓗ
AUDIO MUTE Ⓗ
DOLBY ON Ⓗ
+12V
C4103 0.47 50V
(P4701 SUB AUDIO/SYSTEM CONTROL) P4003
AUDIO L CH
GND
AUDIO R CH
GND
AUDIO L CH Ⓗ
AUDIO R CH Ⓗ
HEAD PHONE L CH
HEAD PHONE R CH
C4124 0.033
(P3202 SUB AUDIO/SYSTEM CONTROL) P4004
AUDIO R CH
AUDIO L CH
GND
(P3005 SIGNAL PROCESS) P4005
GND
AUDIO
IC4001 /UPC1513HA
SWITCHING
REC-OFF
REC-ON
GND
VCC
IC4005 /UPC1513HA
SWITCHING
SWITCHING (AUDIO EE-ON)
Q4007
R4104 8.2K
R4126 8.2K
SWITCHING (AUDIO VV-ON)
R4135 22K
Q4011
R4127 8.2K
R4007 10K
Q4003
C4010 0.33 50V
R4039 10
R4134 22K
SWITCHING (SLP-ON)
R4087 100K
R4088 10K
GND2
SWITCHING IC4003 AN90C21
LP/SLP-ON
SLP-ON
SWITCHING IC4007 AN90C21
R4057 10K
Q4004
C4060 0.33 50V
R4089 10
R4022 22K
L4002 2.2mH
R4027 330
C4023 0.1 50V
R4026 100
C4022 0.1 50V
C4020 0.056
R4024 270
R4025 20KB
R4028 270
C4021 33 10V
C4024 33 10V
C4019 1 50V
R4021 1K
R4023 18K
C4018 33 16V
R4019 8.2K
C4025 0.1
REC LEVEL L CH
C4027 1 50V
EE Ⓗ
MUTE Ⓗ
1/2VCC
VCC
AGC
REC-ON
REC AMP
IC4002 AN6209K
L CH AUDIO REC & PB PROCESS
PB AMP
PB
REC
GND
C4003 1 50V
C4004 470P
R4001 33K
C4002 470P
R4011 3.3K
R4010 50KB
PB GAIN L CH
R4018 820
C4015 1000P
R4009 4.7K
R4005 5KB
R4004 330
C4006 0.22 50V
C4007 22 16V
R4008 4.7K
R4012 1.5K
C4011 10 16V
R4003 100
C4005 0.33 50V
R4002 180
R4006 120K
C4008 0.033
L4001 2.2mH
C4009 10 16V
PB EQL L CH
R4015 2.2M
C4014 10 16V
C4013 100 6V
R4014 33K
AMP
Q4005 2SB641(Q,R)
R4017 100
R4013 1.8K
R4016 12K
C4012 0.22 50V
R4027 22K
TP4004
R4073 18K
R4077 330
C4073 0.1 50V
R4076 100
C4072 0.1 50V
C4070 0.056
REC LEVEL R CH
R4075 20KB
L4004 2.2mH
C4071 33 10V
C4074 33 10V
C4069 1 50V
R4078 270
R4045 1K
R4071 1K
C4068 33 16V
R4074 270
C4077 1 50V
C4075 0.1
R4069 8.2K
C4067 22 16V
IC4006 AN6209K
R CH AUDIO REC & PB PROCESS
C4053 1 50V
C4054 470P
R4051 33K
C4052 470P
R4061 3.3K
R4060 50KB
PB GAIN R CH
R4068 820
C4065 1000P
R4054 330
C4056 0.22 50V
R4055 5KB
C4057 22 16V
R4058 4.7K
R4062 1.5K
R4059 4.7K
C4061 10 16V
R4053 100
C4055 0.33 50V
R4056 120K
C4058 0.033
L4003 2.2mH
C4059 10 16V
R4052 180
PB EQL R CH
R4065 2.2M
C4064 10 16V
C4063 100 6V
R4064 33K
AMP
Q4006 2SD636(Q,R)
C4062 0.22 50V
R4063 1.8K
R4066 12K
R4067 100
IC4009 TA7555P /AN6552/BA4558
GND
HEAD PHONE AMP
C4120 10 16V
C4121 10 16V
R4123 47K
R4124 47K
(9)~(12)(15)
(9)~(15)

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

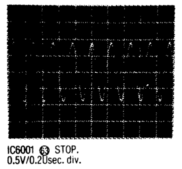
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

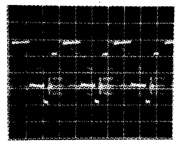

R4022 22K
L4002 2.2mH
TP4002
R4023 18K
R4025 20KB
R4028 270
C4025 0.1
VEL L CH
AGC
REC AMP
REC-ON
EE (H)
MUTE (H)
1/2VCC
VCC
PB
REC
PB GAIN L CH
R4010 50KB
GND
AMP
Q4005 2SB641(Q.R)
FL4001 VLFS0002
FL4002 VLFS0002
IC4004 HA12045
NOISE REDUCTION PROCESS
REF VOLTAGE
VARIABLE FILTER
OVER SHOOT SUPPRESSOR
MIX
DOLBY ON/OFF
TP4004
TP4001
TP4003
IC4008 TA7348P
TUNER
LINE
CAMERA
AUDIO INPUT SELECT
IC4009 TA75557P /AN6552/BA4558
HEAD PHONE AMP
Q4006 2SD636(Q.R)
Q4010
Q4013 2SD1330(R.S.T)
AUDIO MUTE R CH
Q4012 2SD1330(R.S.T)
AUDIO MUTE L CH
Q4020
Q4019
SWITCHING (AUDIO MUTE H -ON)
VJBS0422
8
9
10
11
12

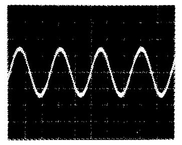
UNLESS OTHERWISE SPECIFIED;
PNP TRANSISTORS ARE 2SB641(R.S),
NPN TRANSISTORS ARE 2SD636(Q.R.S) AND
WATTAGE OF RESISTORS ARE 1/4W.

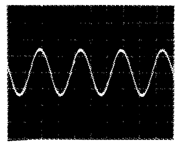
AUDIO SCHEMATIC DIAGRAM	
Q4001	3-D
Q4002	3-E
Q4003	5-C
Q4004	5-A
Q4005	9-C
Q4006	7-A
Q4007	5-D
Q4008	2-D
Q4009	2-D
Q4010	10-A
Q4011	6-C
Q4012	11-A
Q4013	10-A
Q4015	2-D
Q4016	2-D
Q4017	2-C
Q4018	2-C
Q4019	12-A
Q4020	11-B

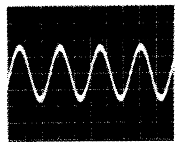
NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 4000 SERIES
SCHEMATIC DIAGRAM···R4002
(R4002 IS ABBREVIATED TO R2)

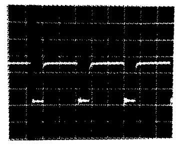

IC6001 (53) STOP.
0.5V/0.2Usec. div.

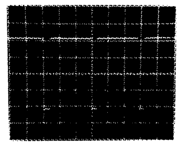

TP3201 STOP.
0.5V/20Usec. div.


TP4001 PB. SP. LP. SLP.
0.2V/1msec. div.

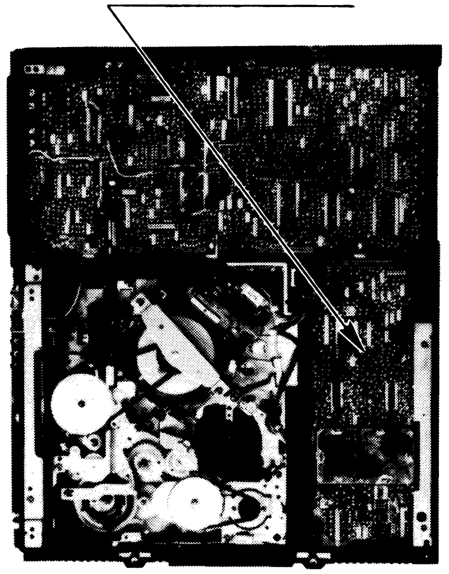

TP4001 REC. SP. LP. SLP.
0.2V/1msec. div.


TP4002 REC. SP. LP. SLP.
0.2V/1msec. div.


TP6001 STOP.
2V/1Usec. div.


TP6003 STOP.
1V/5msec. div.

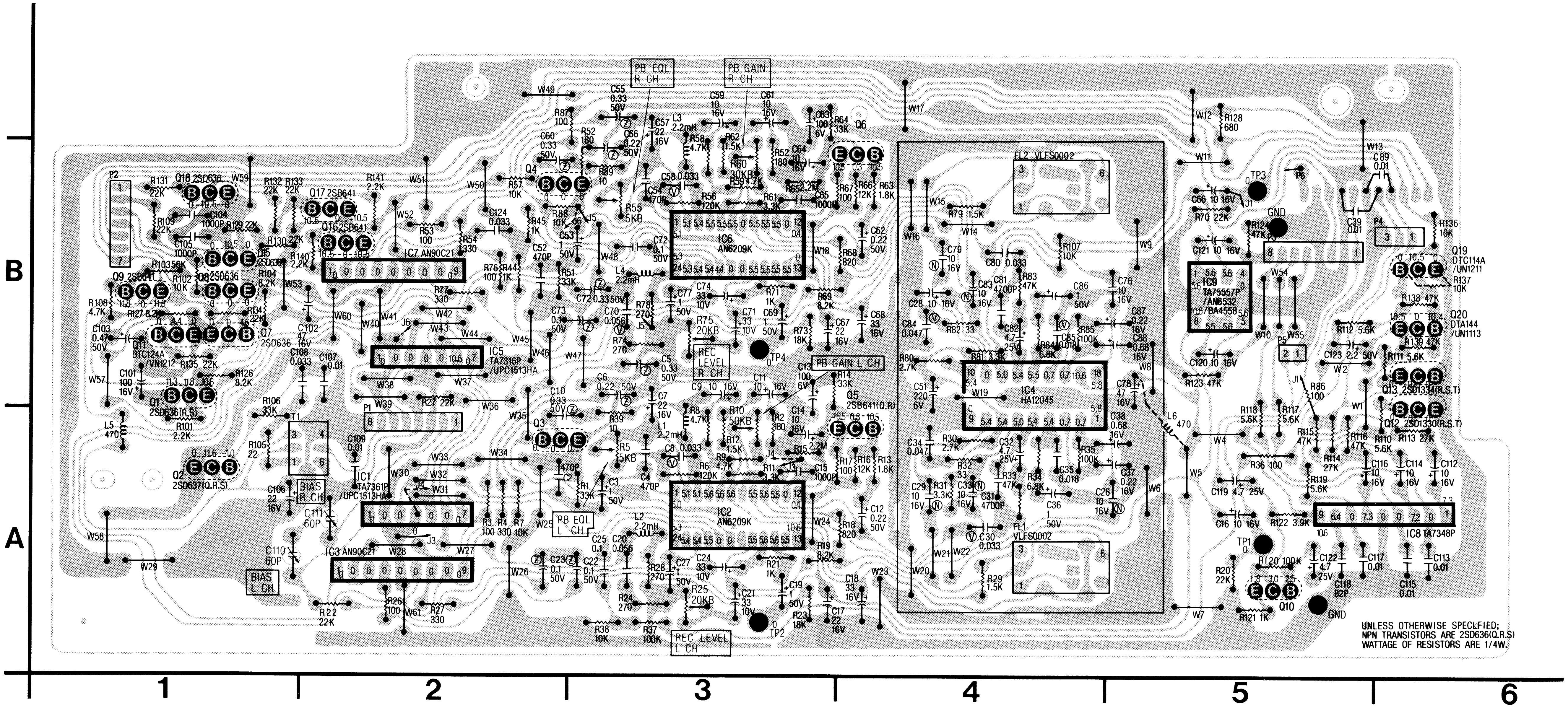
AUDIO C.B.A.



AUDIO C.B.A. VEPS0422A1 (PV-1530)

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN SP REC MODE.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


B
A
1
2
3
4
5
6
PB EQL R CH
PB GAIN R CH
REC LEVEL R CH
PB GAIN L CH
PB EQL L CH
REC LEVEL L CH
BIAS R CH
BIAS L CH
IC1 TA7361P /UPC1513HA
IC2 AN6209K
IC3 AN90C21
IC4 HA12045
IC5 TA7316P /UPC1513HA
IC6 AN6209K
IC7 AN90C21
IC8 TA7348P
IC9 TA75557P /AN6532 /BA4558
FL1 VLFS0002
FL2 VLFS0002
TP1
TP2
TP3
TP4
GND
UNLESS OTHERWISE SPECIFIED;
NPN TRANSISTORS ARE 2SD636(Q.R.S)
WATTAGE OF RESISTORS ARE 1/4W.

P4001	
1	AUDIO HEAD L CH
2	AUDIO HEAD L CH
3	GND
4	AUDIO HEAD R CH
5	AUDIO HEAD R CH
6	GND
7	AUDIO ERASE HEAD
8	GND

P4002	
1	SLP Ⓗ
2	LP/SLP Ⓗ
3	AUDIO DELAY REC Ⓗ
4	AUDIO EE Ⓗ
5	AUDIO MUTE Ⓗ
6	DOLBY ON Ⓗ
7	+12V

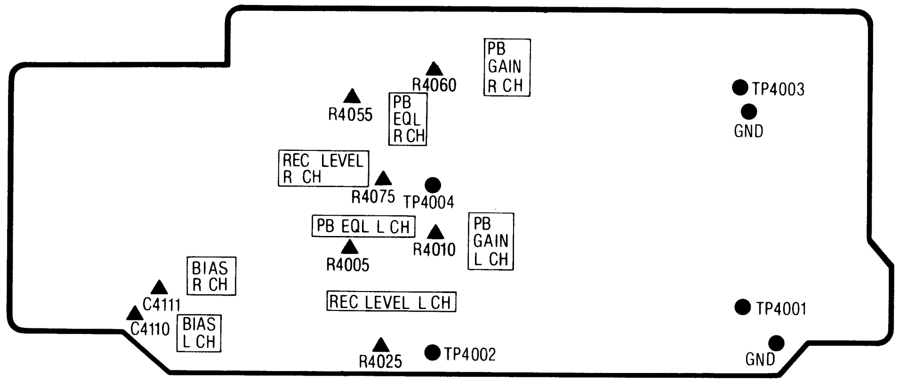
P4003	
1	AUDIO L CH
2	GND
3	AUDIO R CH
4	GND
5	AUDIO L CH Ⓗ
6	AUDIO R CH Ⓗ
7	HEAD PHONE L CH
8	HEAD PHONE R CH

P4004	
1	AUDIO R CH
2	AUDIO L CH
3	GND

P4005	
1	GND
2	AUDIO

VOLTAGE MEASUREMENT:
1. CUE, REVIEW,
COLOR BAR SIGNAL IN SLP MODE.
2. OTHERS
COLOR BAR SIGNAL IN SP MODE.

LOCATION OF TEST POINTS & ADJUSTMENT POINTS


PB GAIN R CH
R4060
R4055
PB EQL R CH
TP4003
GND
REC LEVEL R CH
R4075
TP4004
PB EQL L CH
PB GAIN L CH
R4010
R4005
BIAS R CH
C4111
C4110
BIAS L CH
REC LEVEL L CH
TP4001
R4025
TP4002
GND

REF.NO. / MODE	Q4
	E
STOP	10.5
REC	10.6
PLAY	10.5
CUE	10.4
REV	10.5

REF.NO. / MODE	Q4
	E
STOP	0
REC	0
PLAY	0
CUE	0
REV	0

REF.NO. / MODE	Q4
	E
STOP	0
REC	0
PLAY	0
CUE	0
REV	0

REF.NO. / MODE	Q4
	E
STOP	10.5
REC	10.5
PLAY	10.4
CUE	10.4
REV	10.4

REF.NO. / MODE	1	2
STOP	0	0
REC	0	0
PLAY	0	0

REF.NO. / MODE	1	2
STOP	5.0	5.1
REC	5.0	5.1
PLAY	5.0	5.1

REF.NO. / MODE	21	22
STOP	5.5	5.4
REC	5.5	5.4
PLAY	5.5	5.4

REF.NO. / MODE	1	2
STOP	5.8	0.7
REC	5.8	0.7
PLAY	5.8	0.7

REF.NO. / MODE	1	2
STOP	0	0
REC	0	0
PLAY	0	0

REF.NO. / MODE	1	2
STOP	5.1	5.2
REC	5.1	5.1
PLAY	5.1	5.1

REF.NO. / MODE	21	22
STOP	5.4	5.4
REC	5.4	5.4
PLAY	5.4	5.4

REF.NO. / MODE	1	2
STOP	7.3	0
REC	7.3	0
PLAY	7.2	0

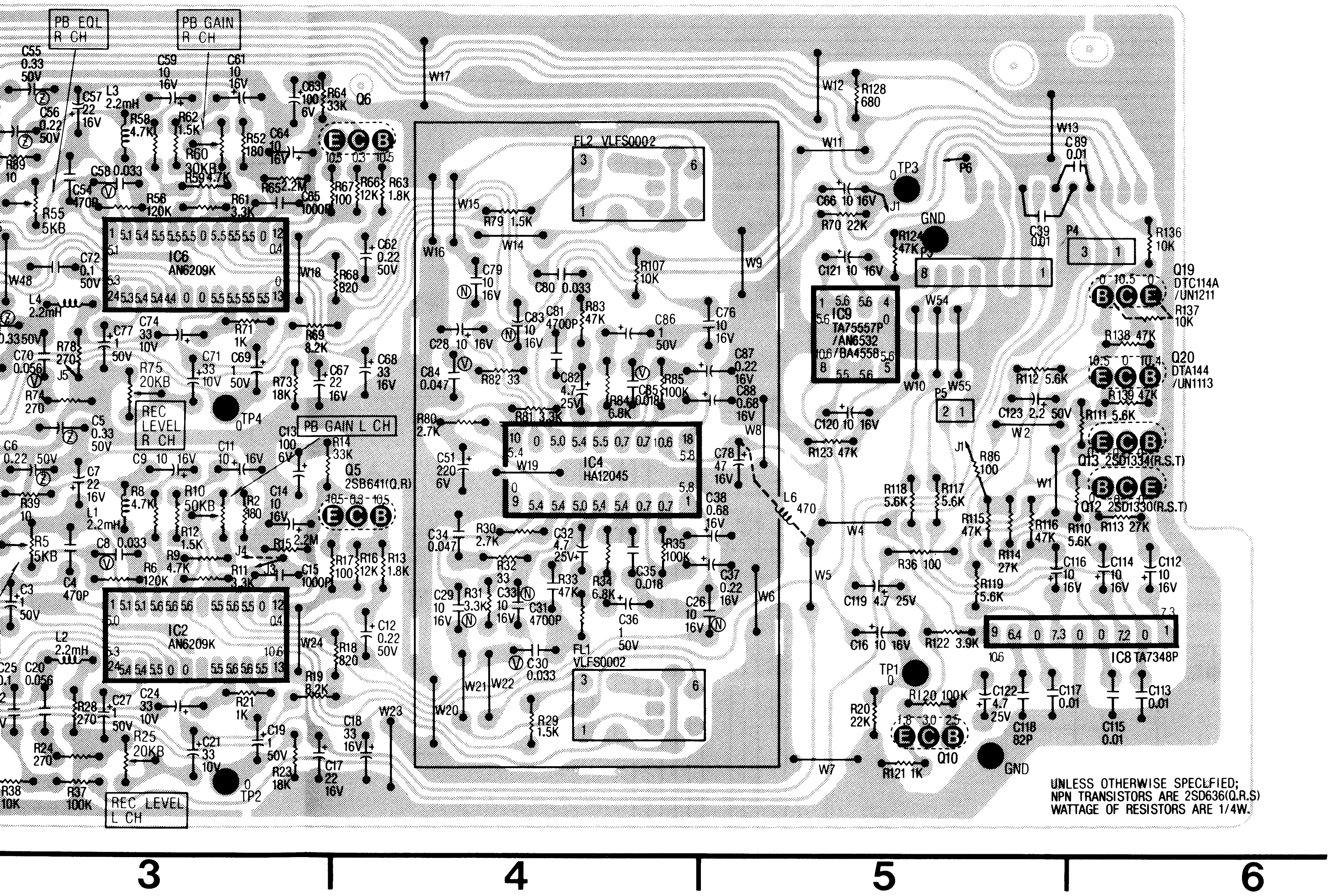
REF.NO. / MODE	TP4001	TP400
STOP	0	0
REC	0	0
PLAY	0	0

VOLTAGE MEASU
1. CUE, REVIEW
COLOR BAR
2. OTHERS
COLOR BAR

4-9
AUDIO C.B.A. PV-1530

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN SP REC MODE.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


PB EQL R CH
PB GAIN R CH
PB GAIN L CH
REC LEVEL R CH
REC LEVEL L CH
IC6 AN6209K
IC2 AN6209K
IC4 HA12045
IC9 TA75557P /AN6532 /BA4558
IC8 TA7348P
FL2 VLFS0002
FL1 VLFS0002
Q5 2SB641(Q.R)
Q6
Q10
Q12 2SD1330(R.S.T)
Q13 2SD1334(R.S.T)
Q19 DTC114A /UN1211
Q20 DTA144 /UN1113
TP1
TP2
TP3
TP4
GND
P4
P5
P6
J1
L6 470
W1
W2
W4
W5
W6
W7
W8
W9
W10
W11
W12
W13
W14
W15
W16
W17
W18
W19
W20
W21
W22
W23
W24
W48
W54
W55
3
4
5
6

UNLESS OTHERWISE SPECIFIED;
NPN TRANSISTORS ARE 2SD636(Q.R.S)
WATTAGE OF RESISTORS ARE 1/4W.

P4004

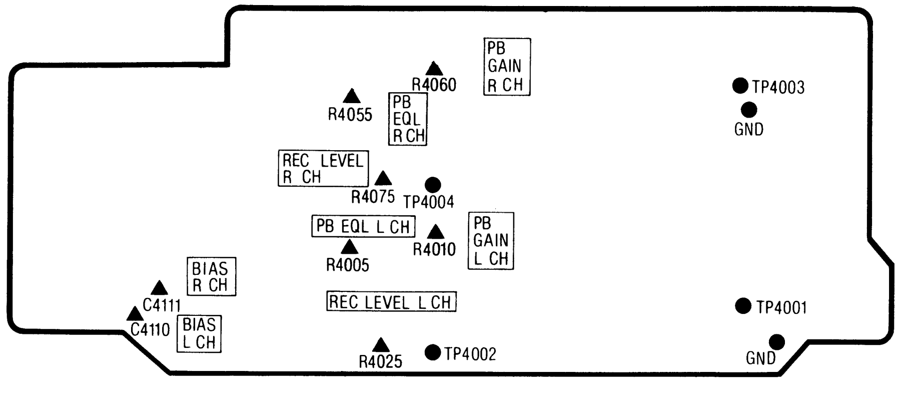
1	AUDIO R CH
2	AUDIO L CH
3	GND

P4005

1	GND
2	AUDIO

TAGE MEASUREMENT:
CUE, REVIEW,
COLOR BAR SIGNAL IN SLP MODE.
OTHERS
COLOR BAR SIGNAL IN SP MODE.

LOCATION OF TEST POINTS & ADJUSTMENT POINTS


PB GAIN R CH
R4060
R4055
PB EQL R CH
REC LEVEL R CH
R4075
TP4004
PB EQL L CH
R4010
PB GAIN L CH
R4005
REC LEVEL L CH
BIAS R CH
C4111
C4110
BIAS L CH
R4025
TP4002
TP4003
GND
TP4001
GND

REF.NO. / MODE	Q4001			Q4002			Q4003			Q4004			Q4005			Q4006		
MODE	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C
STOP	10.5	11.3		0	0	0.2	0	0	0	0	0	0	10.5	10.5	0.3	10.5	10.6	0.3
REC	10.6	11.3	11.8	0	−1.0	11.6	0	0	0	0	0	0	10.5	10.5	0.3	10.5	10.5	0.3
PLAY	10.5	11.2	11.8	0	0.3	0.3	0	0	0	0	0	0	10.5	10.5	0	10.5	10.5	0
CUE	10.4	11.2	11.9	0	0.3	0.3	0	0	0	0	0	0	10.4	10.4	0	10.4	10.4	0
REV	10.5	11.2	11.9	0	0.4	0.4	0	0	0	0	0	0	0	10.4	0	10.4	10.5	0
REF.NO.	Q4007			Q4008			Q4009			Q4010			Q4011			Q4012		
MODE	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C
STOP	0	4.6	0	0	0	11.8	11.8	11.8	0.4	1.8	0	3.1	0	0	4.4	0	0	0
REC	0	4.6	0	0	0	0	11.8	0	11.8	1.8	2.5	3.0	0	0	4.4	0	0	0
PLAY	0	0	5.6	0	0	11.8	11.9	11.8	0.3	1.8	2.5	3.1	0	5.6	0	0	0	0
CUE	0	0	11.8	0	0	11.8	11.8	11.8	0.3	1.9	2.5	3.2	0	5.6	0	0	0.7	0
REV	0	0	5.6	0	0	11.8	11.9	11.8	0.4	1.9	2.5	0	0	5.6	0	0	0	0
REF.NO.	Q4013			Q4015			Q4016			Q4017			Q4018			Q4019		
MODE	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C
STOP	0	0	0	0	0	10.5	10.5	10.5	0	10.5	10.5	0	0	0	10.6	0	0	10.5
REC	0	0	0	0	0	10.5	10.5	10.5	0	10.5	10.5	0	0	0	10.5	0	0	10.5
PLAY	0	0	0	0	0	10.4	10.4	10.4	0	10.5	10.4	0	0	0	10.5	0	0	10.4
CUE	0	0	0	0	0	10.4	10.4	10.4	0	10.4	10.4	0	0	0	10.5	0	0	0
REV	0	0.7	0	0	0	10.4	10.4	10.4	0	10.4	10.4	0	0	0	10.5	4.2	0	0
REF.NO.	Q4020																	
MODE	E	B	C															
STOP	10.5	10.4	0															
REC	10.5	10.4	0															
PLAY	10.4	10.4	0															
CUE	10.4	0	10.4															
REV	10.4	0	10.4															

REF.NO. / MODE	IC4001																			
MODE	1	2	3	4	5	6	7													
STOP	0	0	0	0	4.4	10.6	0													
REC	0	0	0	0	0	0	0													
PLAY	0	0	0	0	0	0	5.6													
REF.NO.	IC4002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	5.0	5.1	5.2	5.5	5.6	5.6	0	5.5	5.6	5.5	0	0.4	10.6	5.6	5.5	5.6	5.6	0	0	4.5
REC	5.0	5.1	5.1	5.6	5.6	5.6	0	5.5	5.6	5.6	0	0.4	10.6	5.5	5.6	5.6	5.5	0	0	0
PLAY	5.0	5.1	5.3	5.5	5.5	5.5	0	5.5	5.5	5.4	0	0	10.5	5.5	5.5	5.5	5.5	0	0	0
REF.NO.	IC4002					IC4003														
MODE	21	22	23	24		1	2	3	4	5	6	7	8	9						
STOP	5.5	5.4	5.4	5.3		0	0	0	0	0	0	0	0	0						
REC	5.5	5.4	5.4	5.3		0	0	0	0	0	0	0	0	0						
PLAY	5.5	5.4	5.3	5.3		0	0	0	0	0	0	0	0	0						
REF.NO.	IC4004																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
STOP	5.8	0.7	0.7	5.4	5.4	5.0	5.4	5.4	0	5.4	0	5.0	5.4	5.5	0.7	0.7	10.6	5.8		
REC	5.8	0.7	0.7	5.4	5.4	5.0	5.4	5.4	0	5.4	0	5.0	5.4	5.5	0.7	0.7	10.6	5.8		
PLAY	5.8	0.7	0.7	5.4	5.3	5.0	5.4	5.4	0	5.4	0	5.0	5.3	5.4	0.7	0.7	10.5	5.7		
REF.NO.	IC4005																			
MODE	1	2	3	4	5	6	7													
STOP	0	0	0	0	0	10.6	0													
REC	0	0	0	0	0	10.6	0													
PLAY	0	0	0	0	0	0	0													
REF.NO.	IC4006																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	5.1	5.2	5.4	5.6	5.6	5.6	0	5.6	5.6	5.6	0	0.4	10.6	5.6	5.6	5.6	5.6	0	0	4.5
REC	5.1	5.1	5.4	5.5	5.5	5.5	0	5.5	5.5	5.5	0	0.4	0	5.5	5.5	5.5	5.5	0	0	4.4
PLAY	5.1	5.1	5.4	5.5	5.5	5.5	0	5.5	5.5	5.5	0	0	0	5.5	5.5	5.5	5.5	0	0	0
REF.NO.	IC4006					IC4007														
MODE	21	22	23	24		1	2	3	4	5	6	7	8	9						
STOP	5.4	5.4	5.4	5.4		0	0	0	0	0	0	0	0	0						
REC	5.4	5.4	5.3	5.3		0	0	0	0	0	0	0	0	0						
PLAY	5.4	5.4	5.3	5.3		0	0	0	0	0	0	0	0	0						
REF.NO.	IC4008										IC4009									
MODE	1	2	3	4	5	6	7	8	9		1	2	3	4	5	6	7	8		
STOP	7.3	0	7.3	0	0	7.3	0	6.4	10.6		5.6	5.6	5.6	0	5.6	5.6	5.5	10.6		
REC	7.3	0	7.2	0	0	7.3	0	6.4	10.6		5.6	5.6	5.6	0	5.6	5.6	5.5	10.6		
PLAY	7.2	0	7.2	0	0	7.2	0	6.3	10.5		5.5	5.5	5.5	0	5.5	5.5	5.5	10.5		
REF.NO. / MODE	TP4001	TP4002	TP4003	TP4004																
STOP	0	0	0	0																
REC	0	0	0	0																
PLAY	0	0	0	0																

VOLTAGE MEASUREMENT:
1. CUE, REVIEW,
COLOR BAR SIGNAL IN SLP MODE.
2. OTHERS
COLOR BAR SIGNAL IN SP MODE.

4-10
SIGNAL PROCESS SCHEMATIC DIAGRAM

SIGNAL PROCESS SCHEMATIC DIAGRAM

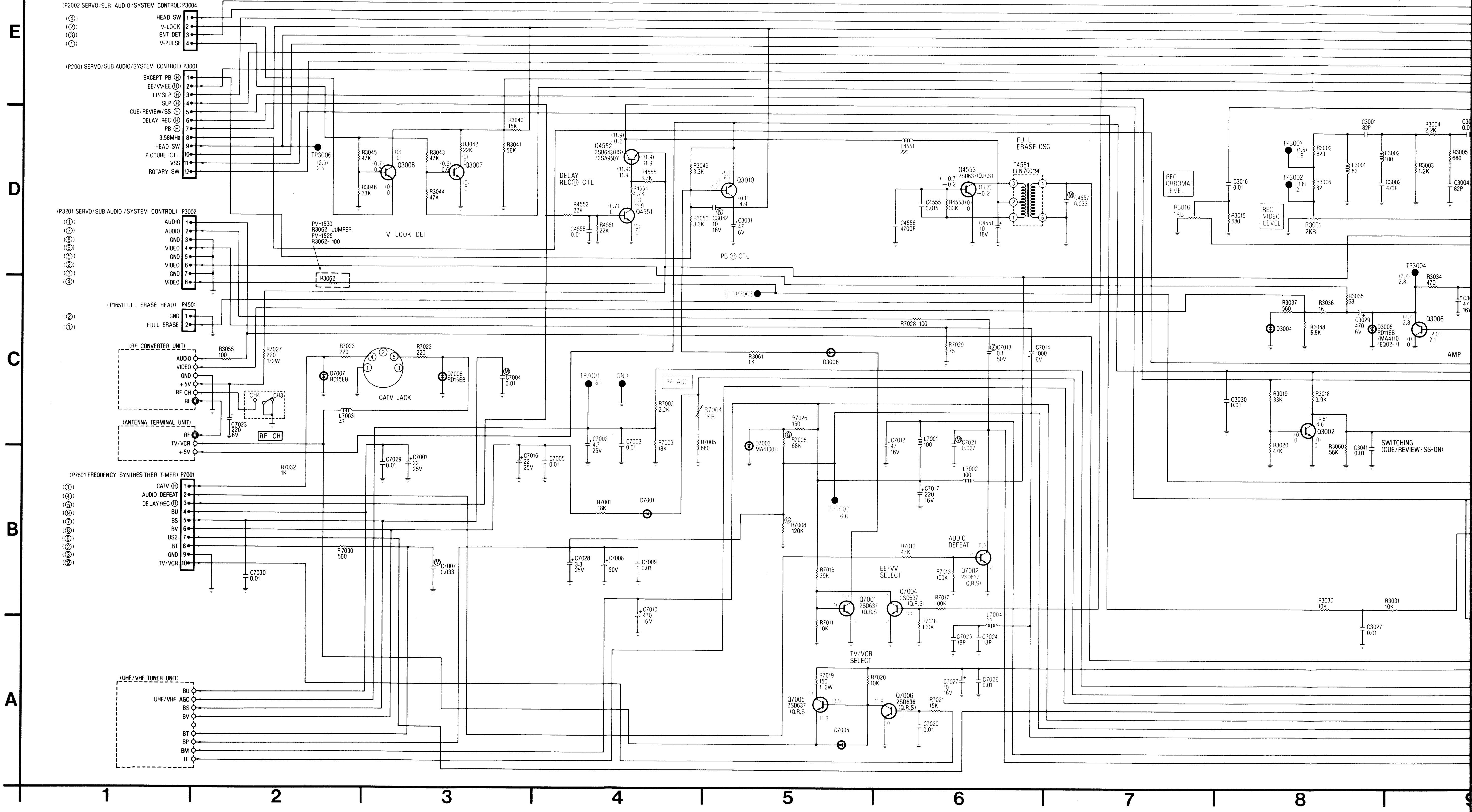
VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRACKET.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

LUMINANCE SIGNAL PROCESS SECTION
NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 3000 SERIES
SCHEMATIC DIAGRAM···R3002
(R3002 IS ABBREVIATED TO R2)

TV
NOT

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.



(P2002 SERVO/SUB AUDIO/SYSTEM CONTROL) P3004
HEAD SW
V-LOCK
ENT DET
V-PULSE
(P2001 SERVO/SUB AUDIO/SYSTEM CONTROL) P3001
EXCEPT PB Ⓗ
EE/VVEE Ⓗ
LP/SLP Ⓗ
SLP Ⓗ
CUE/REVIEW/SS Ⓗ
DELAY REC Ⓗ
PB Ⓗ
3.58MHz
HEAD SW
PICTURE CTL
VSS
ROTARY SW
(P3201 SERVO/SUB AUDIO/SYSTEM CONTROL) P3002
AUDIO
GND
VIDEO
(P1651 FULL ERASE HEAD) P4501
FULL ERASE
(RF CONVERTER UNIT)
+5V
RF CH
RF
CH4
CH3
RF CH
(ANTENNA TERMINAL UNIT)
TV/VCR
(P7601 FREQUENCY SYNTHESITHER TIMER) P7001
CATV Ⓗ
AUDIO DEFEAT
DELAY REC Ⓗ
BU
BS
BV
BS2
BT
(UHF/VHF TUNER UNIT)
UHF/VHF AGC
BP
BM
IF
E
D
C
B
A
1
2
3
4
5
6
7
8
TP3006
Q3008
Q3007
V LOOK DET
PV-1530
R3062 JUMPER
PV-1525
R3062 100
R3062
Q4552
2SB643(RS)/2SA950Y
DELAY
REC Ⓗ CTL
Q4551
Q3010
PB Ⓗ CTL
TP3003
Q4553
2SD637(Q,R,S)
FULL
ERASE OSC
T4551
ELN70019E
CATV JACK
D7007
RD15EB
D7006
RD15EB
TP7001
GND
RF AGC
D3006
D7003
MA4100H
TP7002
D7001
AUDIO
DEFEAT
Q7002
2SD637
EE/VV
SELECT
Q7001
2SD637
Q7004
2SD637
TV/VCR
SELECT
Q7005
2SD637
Q7006
2SD636
D7005
REC
CHROMA
LEVEL
REC
VIDEO
LEVEL
TP3001
TP3002
TP3004
Q3006
AMP
D3004
D3005
RD11EB
/MA4110
(EQ02-11)
Q3002
SWITCHING
(CUE/REVIEW/SS-ON)

VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRACKET.

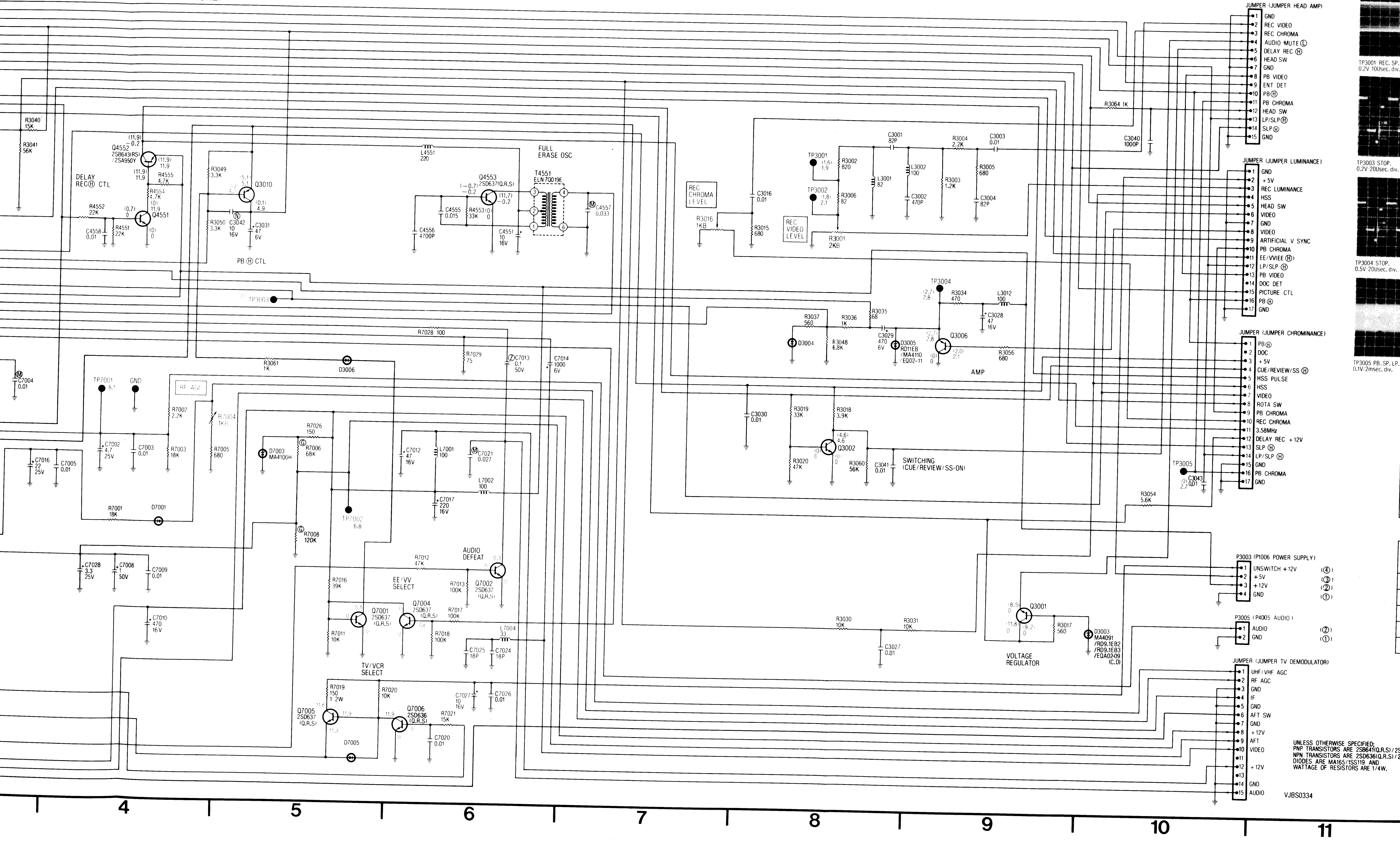
L NOTE:
TEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE
OSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL
NG TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE
VICES" SECTION OF THIS SERVICE MANUAL.

LUMINANCE SIGNAL PROCESS SECTION

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 3000 SERIES
SCHEMATIC DIAGRAM···R3002
(R3002 IS ABBREVIATED TO R2)

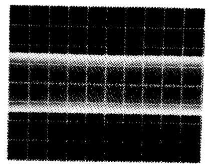
TV DEMODULATOR SECTION

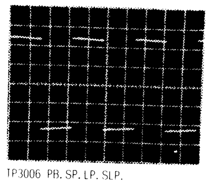
NOTE : REF. NO. ON. C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF.NO. 7000 SERIES
SCHEMATIC DIAGRAM···R7002
(R7002 IS ABBREVIATED TO R2)

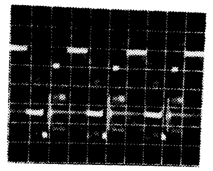


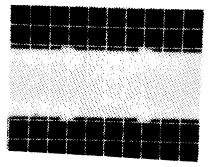
JUMPER (JUMPER HEAD AMP)
1 GND
2 REC VIDEO
3 REC CHROMA
4 AUDIO MUTE Ⓛ
5 DELAY REC Ⓗ
6 HEAD SW
7 GND
8 PB VIDEO
9 ENT DET
10 PB Ⓗ
11 PB CHROMA
12 HEAD SW
13 LP/SLP Ⓗ
14 SLP Ⓗ
15 GND
JUMPER (JUMPER LUMINANCE)
1 GND
2 +5V
3 REC LUMINANCE
4 HSS
5 HEAD SW
6 VIDEO
7 GND
8 VIDEO
9 ARTIFICIAL V SYNC
10 PB CHROMA
11 EE/VVIEE Ⓗ
12 LP/SLP Ⓗ
13 PB VIDEO
14 DOC DET
15 PICTURE CTL
16 PB Ⓗ
17 GND
JUMPER (JUMPER CHROMINANCE)
1 PB Ⓗ
2 DOC
3 +5V
4 CUE/REVIEW/SS Ⓗ
5 HSS PULSE
6 HSS
7 VIDEO
8 ROTA SW
9 PB CHROMA
10 REC CHROMA
11 3.58MHz
12 DELAY REC +12V
13 SLP Ⓗ
14 LP/SLP Ⓗ
15 GND
16 PB CHROMA
17 GND
P3003 (P1006 POWER SUPPLY)
1 UNSWITCH +12V ④
2 +5V ③
3 +12V ②
4 GND ①
P3005 (P4005 AUDIO)
1 AUDIO ②
2 GND ①
JUMPER (JUMPER TV DEMODULATOR)
1 UHF/VHF AGC
2 RF AGC
3 GND
4 IF
5 GND
6 AFT SW
7 GND
8 +12V
9 AFT
10 VIDEO
11
12 +12V
13
14 GND
15 AUDIO
DELAY REC Ⓗ CTL
Q4552 2SB643(RS) /2SA950Y
Q4551
Q3010
PB Ⓗ CTL
Q4553 2SD637(Q.R.S)
T4551 ELN70019E
FULL ERASE OSC
L4551 220
REC CHROMA LEVEL
REC VIDEO LEVEL
R3016 1KB
R3001 2KB
TP3001
TP3002
TP3003
TP3004
TP3005
Q3005 RD11EB /MA4110 /EQ02-11
D3004
Q3006
AMP
Q3002
SWITCHING (CUE/REVIEW/SS-ON)
Q3001
D3003 MA4091 /RD9.1EB2 /RD9.1EB3 /EQA02-09 (C.D)
VOLTAGE REGULATOR
R3064 1K
C3040 1000P
TP7001
GND
RF AGC
D7003 MA4100H
TP7002 6.8
D7001
D3006
AUDIO DEFEAT
Q7002 2SD637 (Q.R.S)
EE/VV SELECT
Q7001 2SD637 (Q.R.S)
Q7004 2SD637 (Q.R.S)
TV/VCR SELECT
Q7005 2SD637 (Q.R.S)
Q7006 2SD636 (Q.R.S)
D7005
L7001 100
L7002 100
L7004 33
4
5
6
7
8
9
10
11
VJBS0334

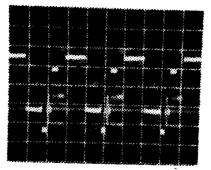
UNLESS OTHERWISE SPECIFIED;
PNP TRANSISTORS ARE 2SB641(Q.R.S)/2SA937M(Q.R.S)
NPN TRANSISTORS ARE 2SD636(Q.R.S)/2SC2021M(Q.R.S)
DIODES ARE MA165/1SS119 AND
WATTAGE OF RESISTORS ARE 1/4W.

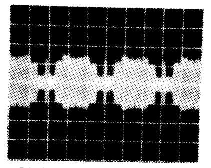

TP3001 REC. SP. LP. SLP.
0.2V 10Usec. div.

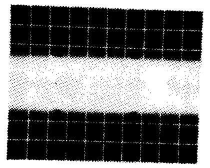

TP3006 PB. SP. LP. SLP.
1V 10msec. div.

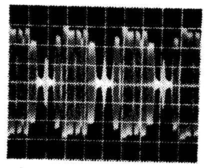

TP3003 STOP.
0.2V 20Usec. div.


PIN OF LUMINANCE C.B.A. ⑬
PLAY SP. LP. SLP 0.1V/2msec


TP3004 STOP.
0.5V 20Usec. div.


PIN OF CHROMINANCE C.B.A. ⑩ REC. SP. LP. SLP.
50mV 20Usec. div.


TP3005 PB. SP. LP. SLP.
0.1V/2msec. div.


PIN OF CHROMINANCE C.B.A. ⑨ PB. SP. LP. SLP.
0.1V 20Usec. div.

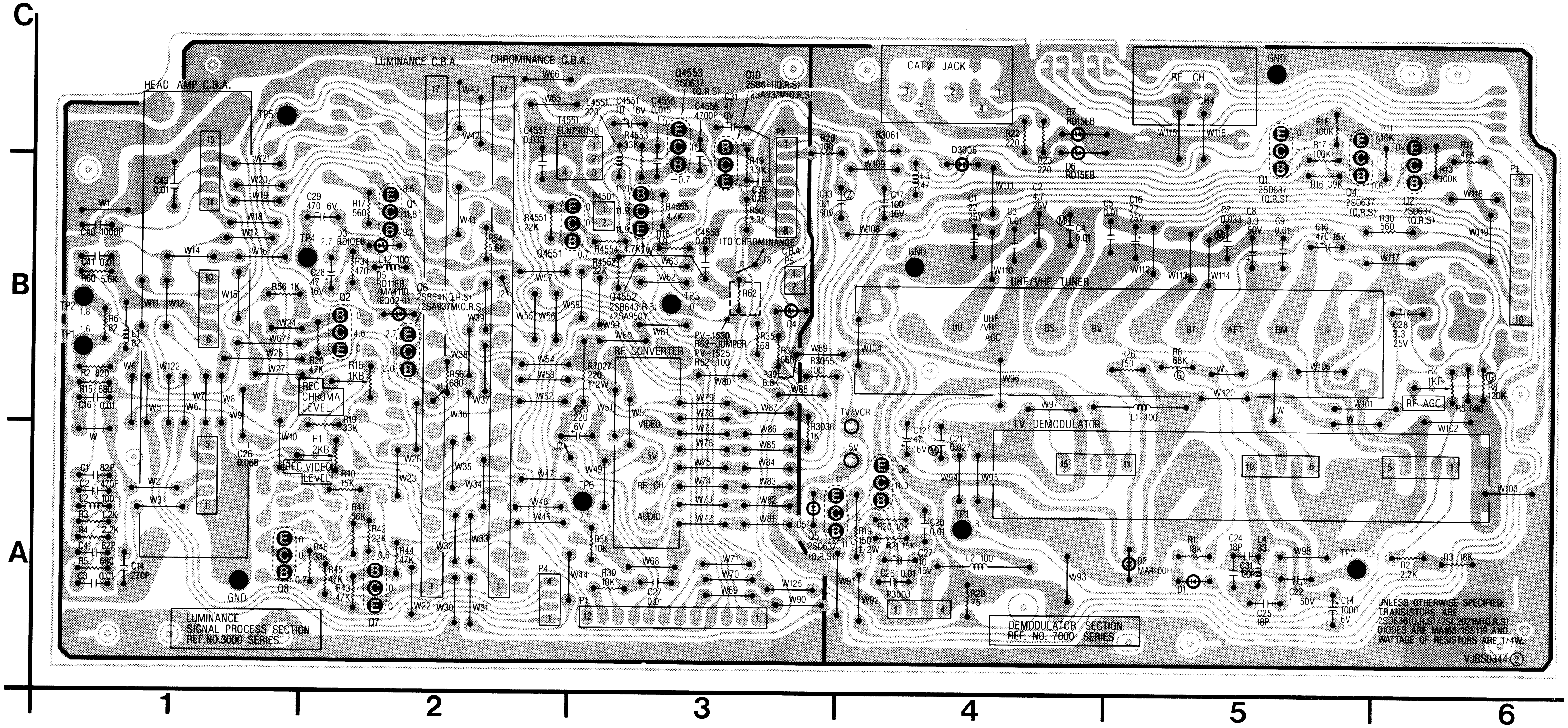
LUMINANCE SIGNAL PROCESS SECTION	
Q3004	7-B
Q3005	8-B
Q3006	9-C
Q3010	5-D
Q3012	6-D

DEMODULATOR SECTION	
Q7001	5-B
Q7002	6-B
Q7004	6-B
Q7005	5-A
Q7006	6-A

SIGNAL PROCESS C.B.A. VEPS0344B1 (PV-1530)
VEPS0344B2 (PV-1525)

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN SP REC MODE.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


C
B
A
1
2
3
4
5
6
HEAD AMP C.B.A.
LUMINANCE C.B.A.
CHROMINANCE C.B.A.
CATV JACK
RF CH
CH3 CH4
GND
UHF/VHF TUNER
BU
UHF /VHF AGC
BS
BV
BT
AFT
BM
IF
TV DEMODULATOR
RF CONVERTER
VIDEO
+5V
RF CH
AUDIO
REC CHROMA LEVEL
REC VIDEO LEVEL
RF AGC
TV/VCR
TP1
TP2
TP3
TP4
TP5
TP6
Q4553 2SD637 (Q.R.S)
Q10 2SB641(Q.R.S) /2SA937M(Q.R.S)
Q4552 2SB643(Q.R.S) /2SA950Y
Q6 2SB641(Q.R.S) /2SA937M(Q.R.S)
Q5 2SD637 (Q.R.S)
Q1 2SD637 (Q.R.S)
Q4 2SD637 (Q.R.S)
Q2 2SD637 (Q.R.S)
T4551 ELN79019E
D5 RD11EB /MA4110 /E002-11
D7 RD15EB
D6 RD15EB
D3 MA4100H
PV-1530 R62→JUMPER PV-1525 R62→100
(TO CHROMINANCE C.B.A.)
LUMINANCE SIGNAL PROCESS SECTION REF.NO.3000 SERIES
DEMODULATOR SECTION REF. NO. 7000 SERIES
VJBS0344 ②

UNLESS OTHERWISE SPECIFIED;
TRANSISTORS ARE 2SD636(Q.R.S)/2SC2021M(Q.R.S)
DIODES ARE MA165/1SS119 AND
WATTAGE OF RESISTORS ARE 1/4W.

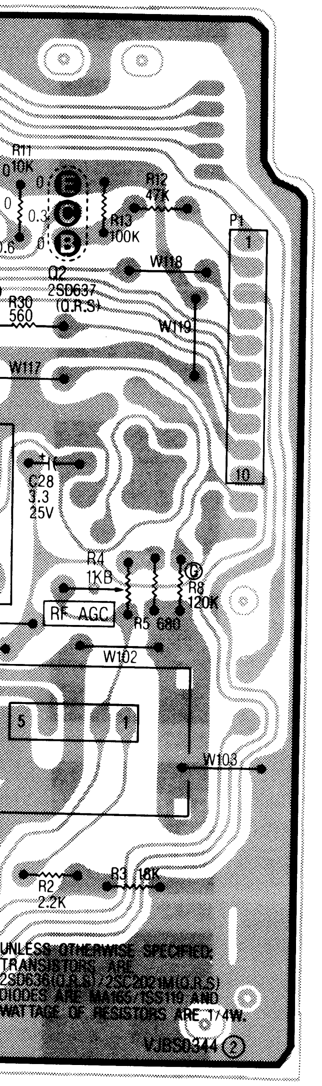
REF.NO. / MODE	Q3001			Q3002			Q3006			Q3007			Q3008			Q3010		
	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C
STOP	0	−0.2	−0.2	0	0	4.6	2.6	1.9	0	0	0.6	0	0	0.7	0	4.9	4.9	0
REC	8.5	9.2	11.8	0	0	4.6	2.6	1.9	0	0	0.6	0	0	0.7	0	4.9	4.9	0
PLAY	0	0	0	0	0	4.6	2.6	1.9	0	0	0.6	0	0	0.7	0	4.9	4.0	4.7
CUE	0	0	0	0	0.7	0	2.7	1.9	0	0	0.6	0	0.2	0.8	0.2	4.9	4.0	4.7
REV	0	0	0	0	0.7	0	2.7	2.0	0	0	0.6	0	0.2	0.8	0.2	4.9	4.0	4.7

REF.NO. / MODE	Q3012						Q4501			Q4502			Q4503					
	E	B	C				E	B	C	E	B	C	E	B	C			
STOP	0	0	0				0	0	12.0	12.1	12.1	−0.2	0	−0.2	−0.2			
REC	0	0	0				0	0.7	0	12.1	11.3	12.0	0	−0.7	11.9			
PLAY	0	0.7	0				0	0	12.0	12.1	12.1	0.2	0	0.2	0.2			
CUE	0	0.7	0				0	0	12.0	12.1	12.1	0.2	0	0.2	0.2			
REV	0	0.7	0.2				0	0	12.0	12.1	12.1	0.2	0	0.2	0.2			

REF.NO. / MODE	TP3001	TP3002	TP3003	TP3004	TP3005	TP3006
STOP	1.3	1.4	3.4	2.6	0	4.9
REC	1.3	1.4	3.3	2.6	0	2.4
PLAY	1.5	1.9	3.1	2.7	2.6	2.4
CUE	1.5	1.6	3.0	2.7	2.6	2.4
REV	1.5	1.6	2.9	2.7	2.6	2.4

VOLTAGE MEASUREMENT:
1. CUE, REVIEW.
COLOR BAR SIGNAL IN SLP MODE.
2. OTHERS
COLOR BAR SIGNAL IN SP MODE.

ND MANY OTHER SEMICONDUCTOR DEVICES ARE
VE AND THEREFORE REQUIRE THE SPECIAL
RIBED UNDER THE "ELECTROSTATICALLY SENSITIVE
HIS SERVICE MANUAL.

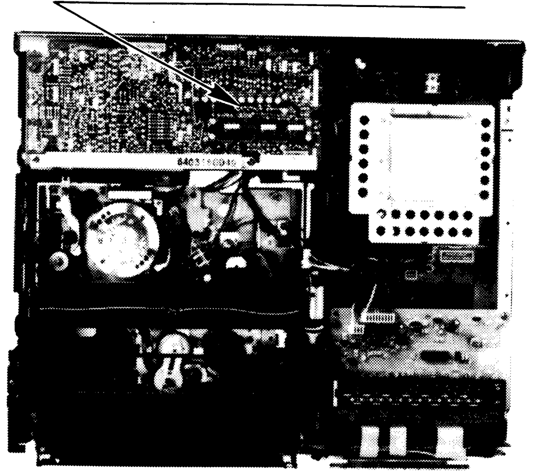

R11
10K
E
C
B
0
0.3
0.6
R12
47K
R13
100K
P1
1
W118
Q2
2SD637
(Q.R.S)
R30
560
W119
W117
C28
3.3
25V
10
R4
1KB
G
R8
120K
RF AGC
R5 680
W102
5
1
W103
R2
2.2K
R3 18K
UNLESS OTHERWISE SPECIFIED,
TRANSISTORS ARE
2SD636(Q.R.S)/2SC2021M(Q.R.S)
DIODES ARE MA165/1SS119 AND
WATTAGE OF RESISTORS ARE 1/4W.
VJBS0344 ②

6

IN SLP MODE.

IN SP MODE.

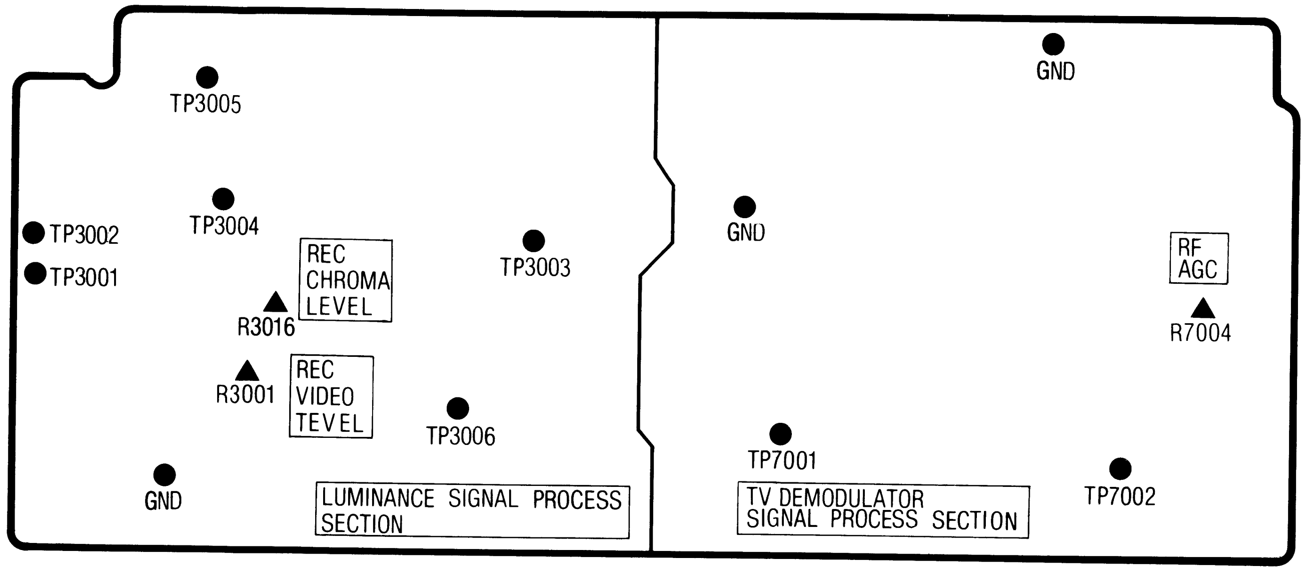
SIGNAL PROCESS C.B.A.



SIGNAL PROCESS SECTION	
Q1	2-B
Q2	2-B
Q6	2-B
Q7	2-A
Q8	1-A
Q10	3-B
Q4551	3-B
Q4552	3-B
Q4553	3-C

DEMODULATOR SECTION	
Q7001	5-C
Q7002	6-C
Q7004	5-C
Q7005	4-A
Q700[redacted]	4-A

LOCATION OF TEST POINTS & ADJUSTMENT POINTS


TP3005
TP3004
TP3002
TP3001
REC CHROMA LEVEL
R3016
TP3003
R3001
REC VIDEO TEVEL
TP3006
GND
LUMINANCE SIGNAL PROCESS SECTION
GND
GND
RF AGC
R7004
TP7001
TV DEMODULATOR SIGNAL PROCESS SECTION
TP7002

P3001

1	EXCEPT PB Ⓗ
2	EE/VV(EE Ⓗ)
3	LP/SLP Ⓗ
4	SLP Ⓗ
5	CUE/REVIEW/SS Ⓗ
6	DELAY REC Ⓗ
7	PB Ⓗ
8	3.58MHz
9	HEAD SW
10	PICTURE
11	VSS
12	

P3002

1	AUDIO
2	AUDIO
3	GND
4	VIDEO
5	GND
6	VIDEO
7	GND
8	VIDEO

P3003

1	UNSWITCH +12V
2	+5V
3	+12V
4	GND

P3004

1	HEAD SW
2	V LOCK
3	ENV DET
4	V PULSE

P3005

1	AUDIO
2	GND

P4501

1	GND
2	FULL ERASE

P7001

1	CATV Ⓗ
2	AUDIO DEFEAT
3	DELAY REC Ⓗ
4	BU
5	BS
6	BV
7	BS2
8	BT
9	GND
10	TV/VCR

JUMPER (TO LUMINANCE)

1	GND
2	+5V
3	REC LUMINANCE
4	HSS
5	HEAD SW
6	VIDEO
7	GND
8	VIDEO
9	ARTIFICIAL V SYNC
10	PB CHROMA
11	EE/VV(EE Ⓗ)
12	LP/SLP Ⓗ
13	PB VIDEO
14	DOC DET
15	PICTURE CTL
16	PB Ⓗ
17	GND

JUMPER
(TO HEAD AMP)

1	GND
2	REC VIDEO
3	REC CHROMA
4	AUDIO MUTE Ⓛ
5	DELAY REC Ⓗ
6	HEAD SW
7	GND
8	PB VIDEO
9	ENT DET
10	PB Ⓗ
11	PB CHROMA
12	HEAD SW PULSE
13	LP/SLP Ⓗ
14	SLP Ⓗ
15	GND

JUMPER
(TO CHROMINANCE)

1	PB Ⓗ
2	DOC
3	+5V
4	CUE/REVIEW/SS Ⓗ
5	HSS PULSE
6	HSS
7	VIDEO
8	ROTA SW
9	PB CHROMA
10	REC CHROMA
11	3.58MHz
12	DELAY REC +12V
13	SLP Ⓗ
14	LP/SLP Ⓗ
15	GND
16	PB CHROMA
17	GND

JUMPER
(TO TV DEMODULATOR)

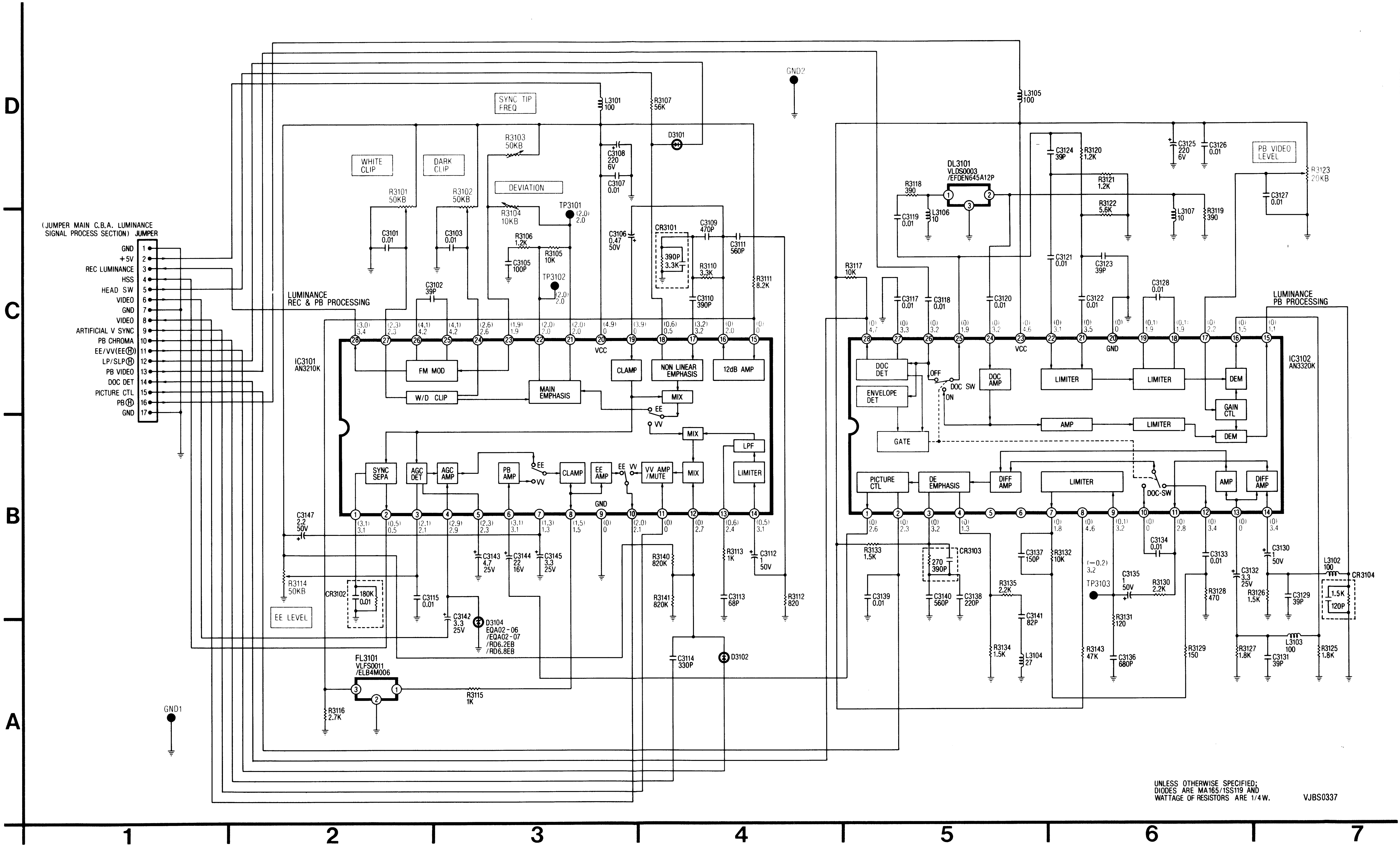
1	UHF/VHF AGC
2	RF AGC
3	GND
4	IF
5	GND
6	AFT SW
7	GND
8	+12V
9	AFT
10	VIDEO
11	
12	+12V
13	
14	GND
15	AUDIO

LUMINANCE SCHEMATIC DIAGRAM

CALLOUTS NEXT TO WIRING PLUGS INDICATE
CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRACKET.

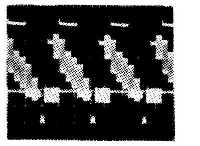
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

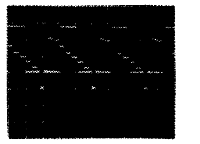

D
C
B
A
1
2
3
4
5
6
7
(JUMPER MAIN C.B.A. LUMINANCE SIGNAL PROCESS SECTION) JUMPER
GND 1
+5V 2
REC LUMINANCE 3
HSS 4
HEAD SW 5
VIDEO 6
GND 7
VIDEO 8
ARTIFICIAL V SYNC 9
PB CHROMA 10
EE/VV(EE(H)) 11
LP/SLP(H) 12
PB VIDEO 13
DOC DET 14
PICTURE CTL 15
PB(H) 16
GND 17
GND1
GND2
LUMINANCE REC & PB PROCESSING
IC3101 AN3210K
FM MOD
W/D CLIP
MAIN EMPHASIS
CLAMP
NON LINEAR EMPHASIS
12dB AMP
MIX
EE
VV
LPF
LIMITER
SYNC SEPA
AGC DET
AGC AMP
PB AMP
EE AMP
VV AMP /MUTE
VCC
GND
WHITE CLIP
DARK CLIP
SYNC TIP FREQ
DEVIATION
EE LEVEL
R3101 50KB
R3102 50KB
R3103 50KB
R3104 10KB
R3105 10K
R3106 1.2K
R3107 56K
R3110 3.3K
R3111 8.2K
R3112 820
R3113 1K
R3114 50KB
R3115 1K
R3116 2.7K
R3140 820K
R3141 820K
C3101 0.01
C3102 39P
C3103 0.01
C3105 100P
C3106 0.47 50V
C3107 0.01
C3108 220 6V
C3109 470P
C3110 390P
C3111 560P
C3112 1 50V
C3113 68P
C3114 330P
C3115 0.01
C3142 3.3 25V
C3143 4.7 25V
C3144 22 16V
C3145 3.3 25V
C3147 2.2 50V
L3101 100
D3101
D3102
D3104 EQA02-06 /EQA02-07 /RD6.2EB /RD6.8EB
CR3101 390P 3.3K
CR3102 180K 0.01
TP3101
TP3102
FL3101 VLFS0011 /ELB4M006
LUMINANCE PB PROCESSING
IC3102 AN3320K
DOC DET
ENVELOPE DET
GATE
OFF
DOC SW
ON
DOC AMP
LIMITER
DEM
GAIN CTL
AMP
PICTURE CTL
DE EMPHASIS
DIFF AMP
DOC-SW
PB VIDEO LEVEL
DL3101 VLDS0003 /EFOEN645A12P
R3117 10K
R3118 390
R3119 390
R3120 1.2K
R3121 1.2K
R3122 5.6K
R3123 20KB
R3125 1.8K
R3126 1.5K
R3127 1.8K
R3128 470
R3129 150
R3130 2.2K
R3131 120
R3132 10K
R3133 1.5K
R3134 1.5K
R3135 2.2K
R3143 47K
C3117 0.01
C3118 0.01
C3119 0.01
C3120 0.01
C3121 0.01
C3122 0.01
C3123 39P
C3124 39P
C3125 220 6V
C3126 0.01
C3127 0.01
C3128 0.01
C3129 39P
C3130 1 50V
C3131 39P
C3132 3.3 25V
C3133 0.01
C3134 0.01
C3135 1 50V
C3136 680P
C3137 150P
C3138 220P
C3139 0.01
C3140 560P
C3141 82P
L3102 100
L3103 100
L3104 27
L3105 100
L3106 10
L3107 10
CR3103 270 390P
CR3104 1.5K 120P
TP3103

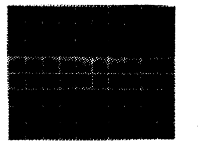
UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165/1SS119 AND
WATTAGE OF RESISTORS ARE 1/4W.

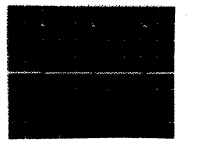
VJBS0337

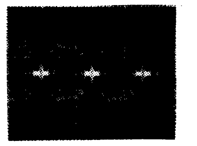
NOTE: REF.
EXAM
(R31

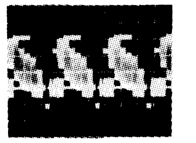

IC3101 ④ STOP.
0.2V/20Usec. div.

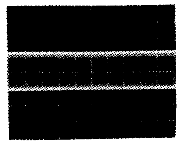

TP3102 REC. SP. LP. SLP.
0.1V/20Usec. div.

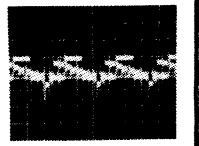

IC3102 ⑯ PB. SP. LP. SLP.
0.5V/5msec. div.


IC3101 ② REC/PB. SP. LP. SLP.
2V/20Usec. div.

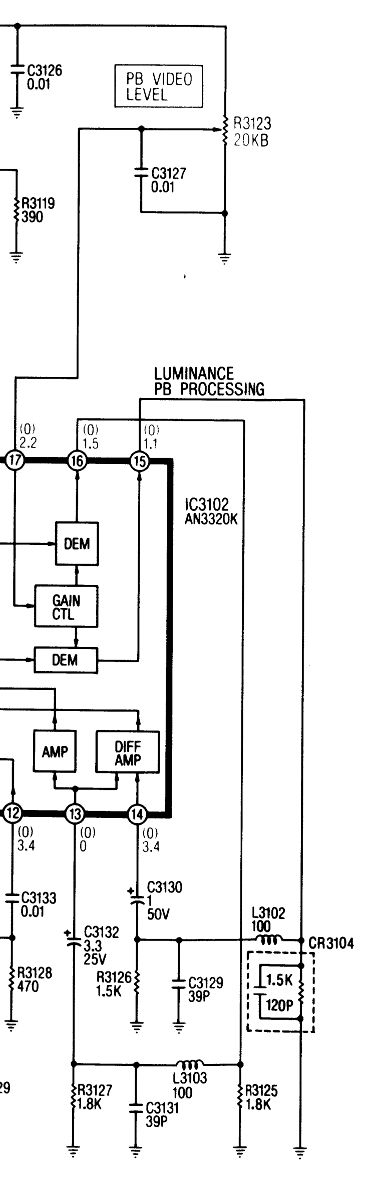

IC3101 ⑫ PB. SP. LP. SLP.
0.2V/20Usec. div.


IC3101 ⑩ REC/PB. SP. LP. SLP.
0.5V/20Usec. div.


IC3101 ㉘ REC. SP. LP. SLP.
0.5V/20Usec. div.

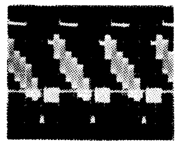

TP3101 REC. SP.
0.2V/20Usec. div.

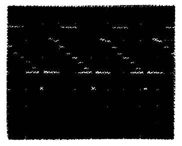
DEVICES ARE
SPECIAL
ALLY SENSITIVE

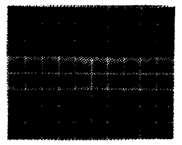

C3126
0.01
PB VIDEO LEVEL
R3123
20KB
C3127
0.01
R3119
390
LUMINANCE
PB PROCESSING
(0)
2.2
(0)
1.5
(0)
1.1
⑰
⑯
⑮
IC3102
AN3320K
DEM
GAIN CTL
DEM
AMP
DIFF AMP
⑫
⑬
⑭
(0)
3.4
(0)
0
(0)
3.4
C3133
0.01
C3132
3.3
25V
C3130
1
50V
L3102
100
CR3104
1.5K
120P
R3128
470
R3126
1.5K
C3129
39P
R3127
1.8K
L3103
100
C3131
39P
R3125
1.8K
7

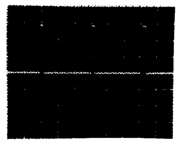
WISE SPECIFIED;
IA165/1SS119 AND
ESISTORS ARE 1/4W.

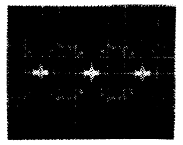
VJBS0337

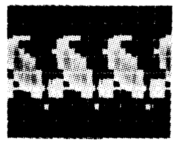

IC3101 ④ STOP.
0.2V/20Usec. div.

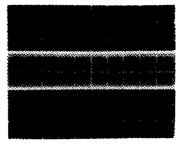

TP3102 REC. SP. LP. SLP.
0.1V/20Usec. div.

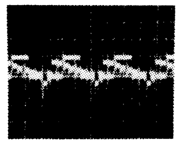

IC3102 ⑯ PB. SP. LP. SLP.
0.5V/5msec. div.

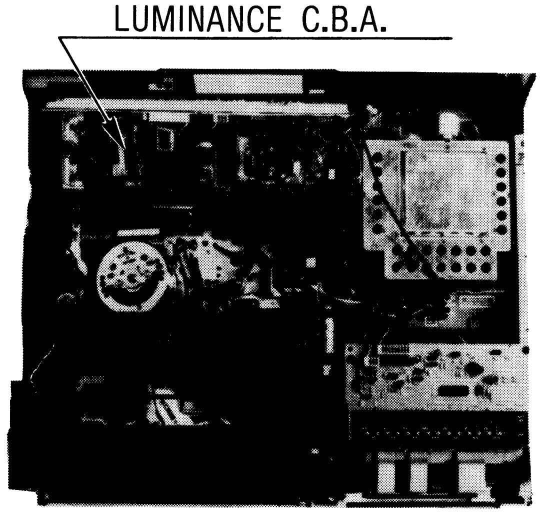

IC3101 ② REC/PB. SP. LP. SLP.
2V/20Usec. div.


IC3101 ⑫ PB. SP. LP. SLP.
0.2V/20Usec. div.

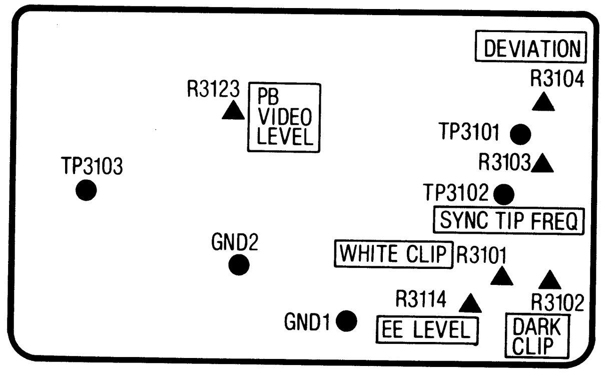

IC3101 ⑩ REC/PB. SP. LP. SLP.
0.5V/20Usec. div.


IC3101 ㉘ REC. SP. LP. SLP.
0.5V/20Usec. div.


TP3101 REC. SP.
0.2V/20Usec. div.


LUMINANCE C.B.A.

LOCATION OF TEST POINTS & ADJUSTMENT POINTS


DEVIATION
R3104
R3123
PB VIDEO LEVEL
TP3101
R3103
TP3103
TP3102
SYNC TIP FREQ
GND2
WHITE CLIP
R3101
R3114
R3102
GND1
EE LEVEL
DARK CLIP

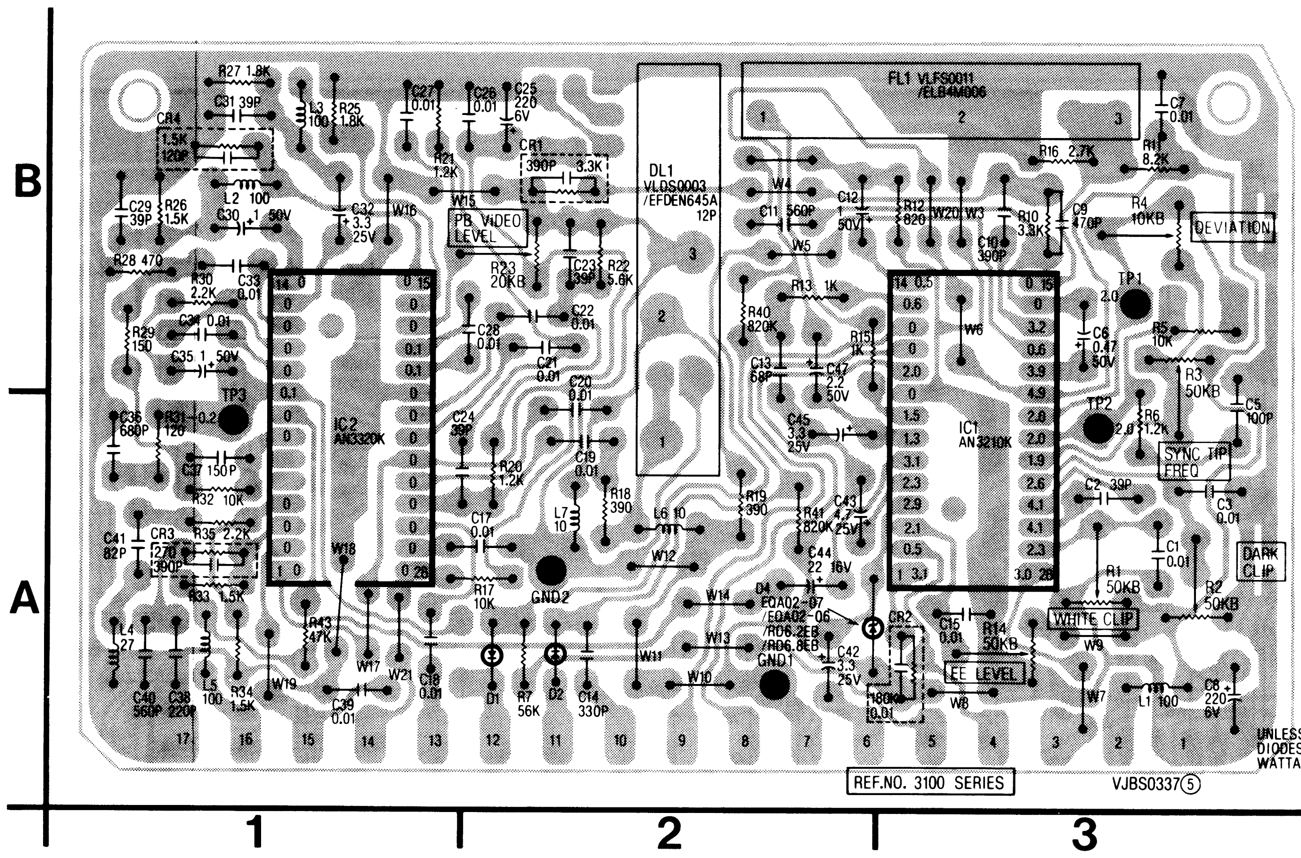
VOLTAGE MEASUREMENT:
1. CUE, REVIEW,
COLOR BAR SIGNAL IN SLP MODE.
2. OTHERS
COLOR BAR SIGNAL IN SP MODE.
★ : UNMEASURABLE OR UNNECESSARY TO MEASURE.

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 3100 SERIES
SCHEMATIC DIAGRAM···R3102
(R3102 IS ABBREVIATED TO R2)

LUMINANCE C.B.A. VEPS0337A

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN SP REC MODE.

CAUTION:DO NOT BEND OR SPREAD APART THE LUMINANCE AND CHROMINANCE PACKS.
BY DOING SO DAMAGE TO THE MAIN C.B.A OR PINS ON THE PACKS MAY RESULT.


B
A
1
2
3
FL1 VLFS0011
/ELB4M006
DL1
VLDS0003
/EFDEN645A
12P
IC2
AN3320K
IC1
AN3210K
TP1
TP2
TP3
GND1
GND2
PB VIDEO LEVEL
DEVIATION
SYNC TIP FREQ
DARK CLIP
WHITE CLIP
EE LEVEL
REF.NO. 3100 SERIES
VJBS0337⑤

UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165/1SS119 AND
WATTAGE OF RESISTORS ARE 1/4W.

JUMPER

1	GND
2	+5V
3	REC LUMINANCE
4	HSS
5	HEAD SW
6	VIDEO
7	GND
8	VIDEO
9	ARTIFICIAL V SYNC
10	PB CHROMA
11	EE/VV(EE Ⓗ)
12	LP/SLP Ⓗ
13	PB VIDEO
14	DOC DET
15	PICTURE CTL
16	PB Ⓗ
17	GND

REF.NO.	IC3101																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.1	0.4	2.1	2.9	2.3	3.1	1.3	1.5	0	1.9	0	4.3	0.7	0.6	0	2.0	3.2	1.5	3.9	4.9
REC	3.1	0.5	2.1	2.9	2.3	3.1	1.3	1.5	0	2.0	0	0	0.6	0.5	0	0	3.2	0.6	3.9	4.9
PLAY	3.1	0.5	2.1	2.9	2.3	3.1	1.3	1.5	0	2.1	0	2.7	2.4	3.1	0	2.0	3.2	0.5	0	0
CUE	3.1	0.3	2.1	2.9	2.3	3.1	1.3	1.5	0	2.1	0.1	2.6	2.5	3.1	1.3	2.0	3.1	2.0	3.9	4.9
REV	3.1	0.4	2.1	2.9	2.3	3.1	1.3	1.5	0	2.0	0.1	2.6	2.5	3.1	1.3	2.0	3.2	2.1	3.9	4.9

REF.NO.	IC3101																			
MODE	21	22	23	24	25	26	27	28												
STOP	2.0	2.0	1.9	2.6	4.1	4.1	2.3	3.0												
REC	2.0	2.0	1.9	2.6	4.1	4.1	2.3	3.0												
PLAY	2.0	2.0	1.9	2.6	4.2	4.2	2.3	3.4												
CUE	2.0	2.0	2.0	2.6	4.2	4.2	2.3	3.4												
REV	2.0	2.0	1.9	2.5	4.2	4.2	2.3	3.4												

REF.NO.	IC3102																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	0	★	★	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0
REC	0	0	0	0	★	★	0	0	0.1	0	0	0	0	0	0	0	0	0.1	0.1	0
PLAY	2.6	2.3	3.2	1.3	★	★	1.8	4.6	3.2	0	2.8	3.4	0	3.4	1.1	1.5	2.2	1.9	1.9	0
CUE	2.6	2.4	3.3	1.4	★	★	1.9	4.6	3.2	3.5	2.8	3.5	3.4	3.4	1.0	1.5	2.2	1.9	1.9	0
REV	2.6	2.3	3.3	1.4	★	★	1.8	4.6	3.2	3.4	2.8	3.5	3.5	3.4	1.1	1.5	2.2	1.9	1.9	0

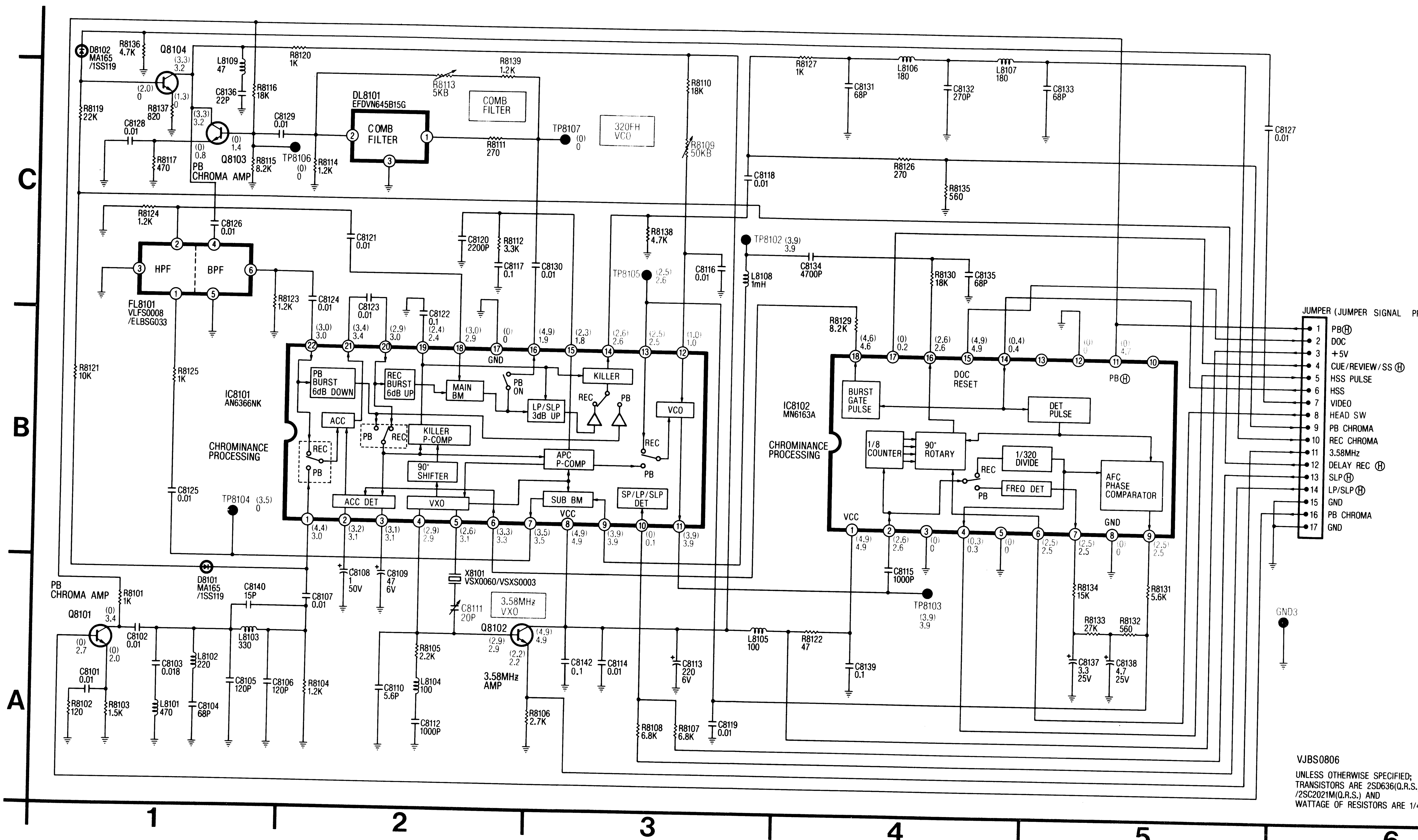
REF.NO.	IC3102																			
MODE	21	22	23	24	25	26	27	28												
STOP	0	0	0	0	0	0	0	0												
REC	0	0	0	0	0	0	0	0												
PLAY	3.5	3.1	4.6	3.2	1.9	3.2	3.3	4.7												
CUE	3.5	3.2	4.6	3.2	1.9	3.2	3.1	0												
REV	3.5	3.1	4.6	3.2	1.8	3.2	3.2	4.6												

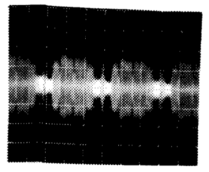
REF.NO. / MODE	TP3101	TP3102	TP3103
STOP	2.0	2.0	0
REC	2.0	2.0	0.2
PLAY	2.0	2.0	3.2
CUE	2.0	2.0	3.2
REV	2.0	2.0	3.2

CHROMINANCE SCHEMATIC DIAGRAM

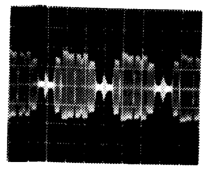
VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRACKET.

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

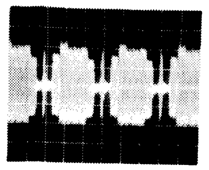

D8102
MA165
/1SS119
R8136
4.7K
Q8104
(3.3)
3.2
(2.0)
0
(1.3)
0
R8119
22K
R8137
820
C8128
0.01
(3.3)
3.2
(0)
0.8
(0)
1.4
PB
CHROMA AMP
Q8103
R8117
470
L8109
47
C8136
22P
R8116
18K
R8115
8.2K
C8129
0.01
TP8106
(0)
0
R8114
1.2K
R8120
1K
R8113
5KB
R8139
1.2K
DL8101
EFDVN645B15G
COMB
FILTER
COMB
FILTER
R8111
270
TP8107
(0)
0
320FH
VCO
R8110
18K
R8109
50KB
R8127
1K
C8131
68P
L8106
180
C8132
270P
L8107
180
C8133
68P
C8127
0.01
C8118
0.01
R8126
270
R8135
560
R8124
1.2K
C8126
0.01
HPF
BPF
FL8101
VLFS0008
/ELBSG033
R8123
1.2K
C8124
0.01
C8121
0.01
C8123
0.01
C8122
0.1
C8120
2200P
R8112
3.3K
C8117
0.1
C8130
0.01
R8138
4.7K
TP8105
(2.5)
2.6
C8116
0.01
TP8102 (3.9)
3.9
L8108
1mH
C8134
4700P
R8130
18K
C8135
68P
R8129
8.2K
R8121
10K
R8125
1K
IC8101
AN6366NK
CHROMINANCE
PROCESSING
PB
BURST
6dB DOWN
REC
BURST
6dB UP
MAIN
BM
PB
ON
LP/SLP
3dB UP
KILLER
REC
PB
VCO
ACC
REC
PB
KILLER
P-COMP
REC
90°
SHIFTER
APC
P-COMP
PB
ACC DET
VXO
SUB BM
VCC
SP/LP/SLP
DET
GND
C8125
0.01
TP8104 (3.5)
0
IC8102
MN6163A
CHROMINANCE
PROCESSING
BURST
GATE
PULSE
DOC
RESET
DET
PULSE
PB
1/8
COUNTER
90°
ROTARY
1/320
DIVIDE
REC
PB
FREQ DET
AFC
PHASE
COMPARATOR
VCC
GND
C8115
1000P
TP8103
(3.9)
3.9
R8134
15K
R8131
5.6K
R8133
27K
R8132
560
C8137
3.3
25V
C8138
4.7
25V
JUMPER (JUMPER SIGNAL PROCESS)
1 PB
2 DOC
3 +5V
4 CUE/REVIEW/SS
5 HSS PULSE
6 HSS
7 VIDEO
8 HEAD SW
9 PB CHROMA
10 REC CHROMA
11 3.58MHz
12 DELAY REC
13 SLP
14 LP/SLP
15 GND
16 PB CHROMA
17 GND
GND3
PB
CHROMA AMP
Q8101
R8101
1K
(0)
3.4
(0)
2.7
(0)
2.0
C8102
0.01
D8101
MA165
/1SS119
C8140
15P
C8107
0.01
C8101
0.01
R8102
120
R8103
1.5K
C8103
0.018
L8102
220
L8103
330
L8101
470
C8104
68P
C8105
120P
C8106
120P
R8104
1.2K
C8108
1
50V
C8109
47
6V
X8101
VSX0060/VSXS0003
C8111
20P
3.58MHz
VXO
Q8102
(2.9)
2.9
(2.2)
2.2
(4.9)
4.9
3.58MHz
AMP
R8105
2.2K
C8110
5.6P
L8104
100
C8112
1000P
R8106
2.7K
C8142
0.1
C8114
0.01
C8113
220
6V
L8105
100
R8122
47
C8139
0.1
R8108
6.8K
R8107
6.8K
C8119
0.01
A
B
C
1
2
3
4
5
6



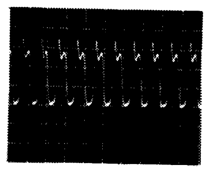
TP8107 PB. SP. LP. SLP.
0.2V/20µsec. div.



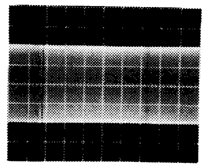
PIN OF CHROMA. C.B.A. ⑨ PB. SP. LP. SLP.
0.2V/20µsec. div.



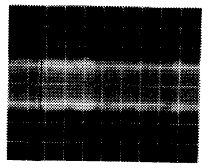
PIN OF CHROMA. C.B.A. ⑩ REC. SP. LP. SLP.
50mV/20µsec. div.



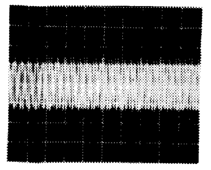
TP8103 REC. SP. LP. SLP.
0.2V/0.2µsec. div.



PIN OF CHROMA. C.B.A. ⑪ REC. SP. LP. SLP.
0.2V/20µsec. div.



PIN OF CHROMA. C.B.A. ⑯ PB. SP. LP. SLP.
0.1V/5msec. div.

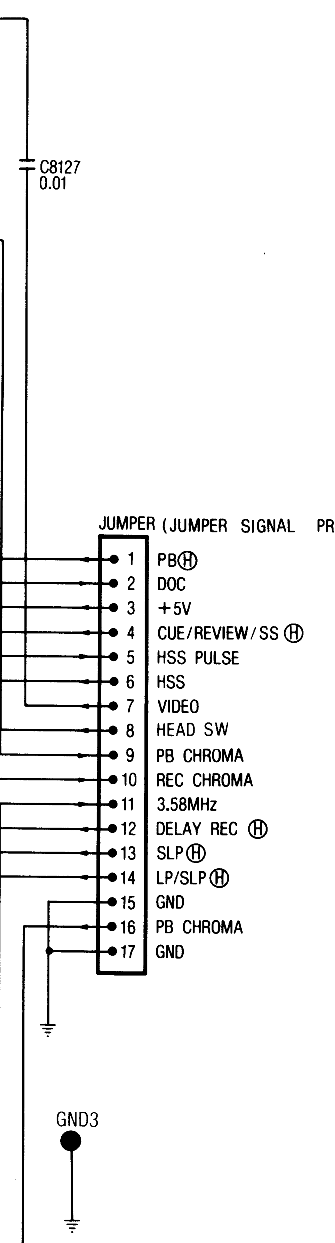


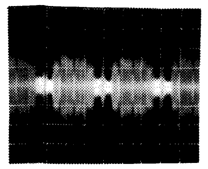
TP8104 STOP.
0.5V/2µsec. div.

VJBS0806

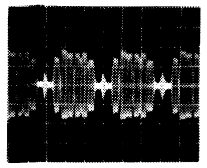
UNLESS OTHERWISE SPECIFIED;
TRANSISTORS ARE 2SD636(Q.R.S.)
/2SC2021M(Q.R.S.) AND
WATTAGE OF RESISTORS ARE 1/4W.

TE
RAM.

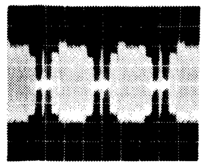

C8127
0.01
JUMPER (JUMPER SIGNAL PROCESS)
1 PBⒽ
2 DOC
3 +5V
4 CUE/REVIEW/SS Ⓗ
5 HSS PULSE
6 HSS
7 VIDEO
8 HEAD SW
9 PB CHROMA
10 REC CHROMA
11 3.58MHz
12 DELAY REC Ⓗ
13 SLPⒽ
14 LP/SLPⒽ
15 GND
16 PB CHROMA
17 GND
GND3



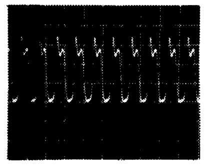
TP8107 PB. SP. LP. SLP.
0.2V/20Usec. div.



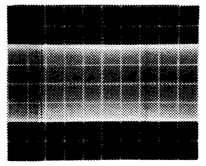
PIN OF CHROMA. C.B.A. ⑨ PB. SP. LP. SLP.
0.2V/20Usec. div.



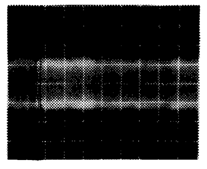
PIN OF CHROMA. C.B.A. ⑩ REC. SP. LP. SLP.
50mV/20Usec. div.



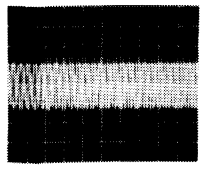
TP8103 REC. SP. LP. SLP.
0.2V/0.2Usec. div.



PIN OF CHROMA. C.B.A. ⑪ REC. SP. LP. SLP.
0.2V/20Usec. div.



PIN OF CHROMA. C.B.A. ⑯ PB. SP. LP. SLP.
0.1V/5msec. div.



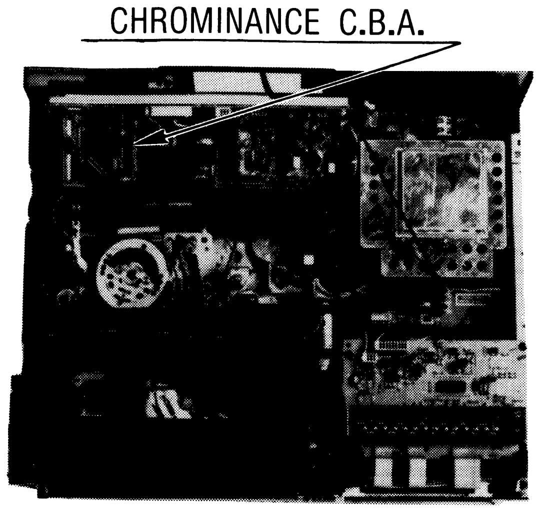
TP8104 STOP.
0.5V/2Usec. div.

VJBS0806

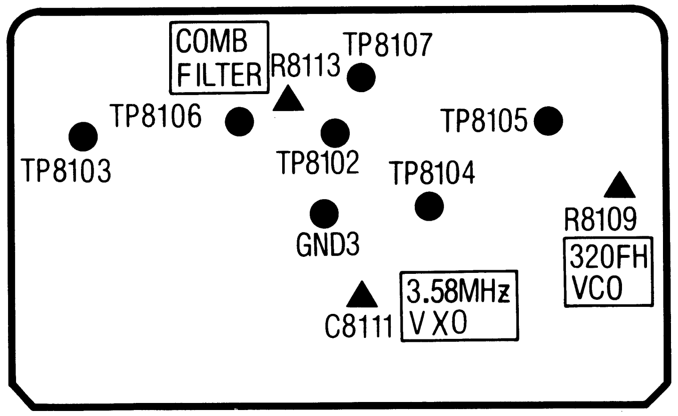
UNLESS OTHERWISE SPECIFIED;
TRANSISTORS ARE 2SD636(Q.R.S.)
/2SC2021M(Q.R.S.) AND
WATTAGE OF RESISTORS ARE 1/4W.

6

CHROMINANCE C.B.A.



LOCATION OF TEST POINTS & ADJUSTMENT POINTS


COMB FILTER
R8113
TP8107
TP8106
TP8105
TP8103
TP8102
TP8104
GND3
R8109
320FH VCO
3.58MHz VXO
C8111

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

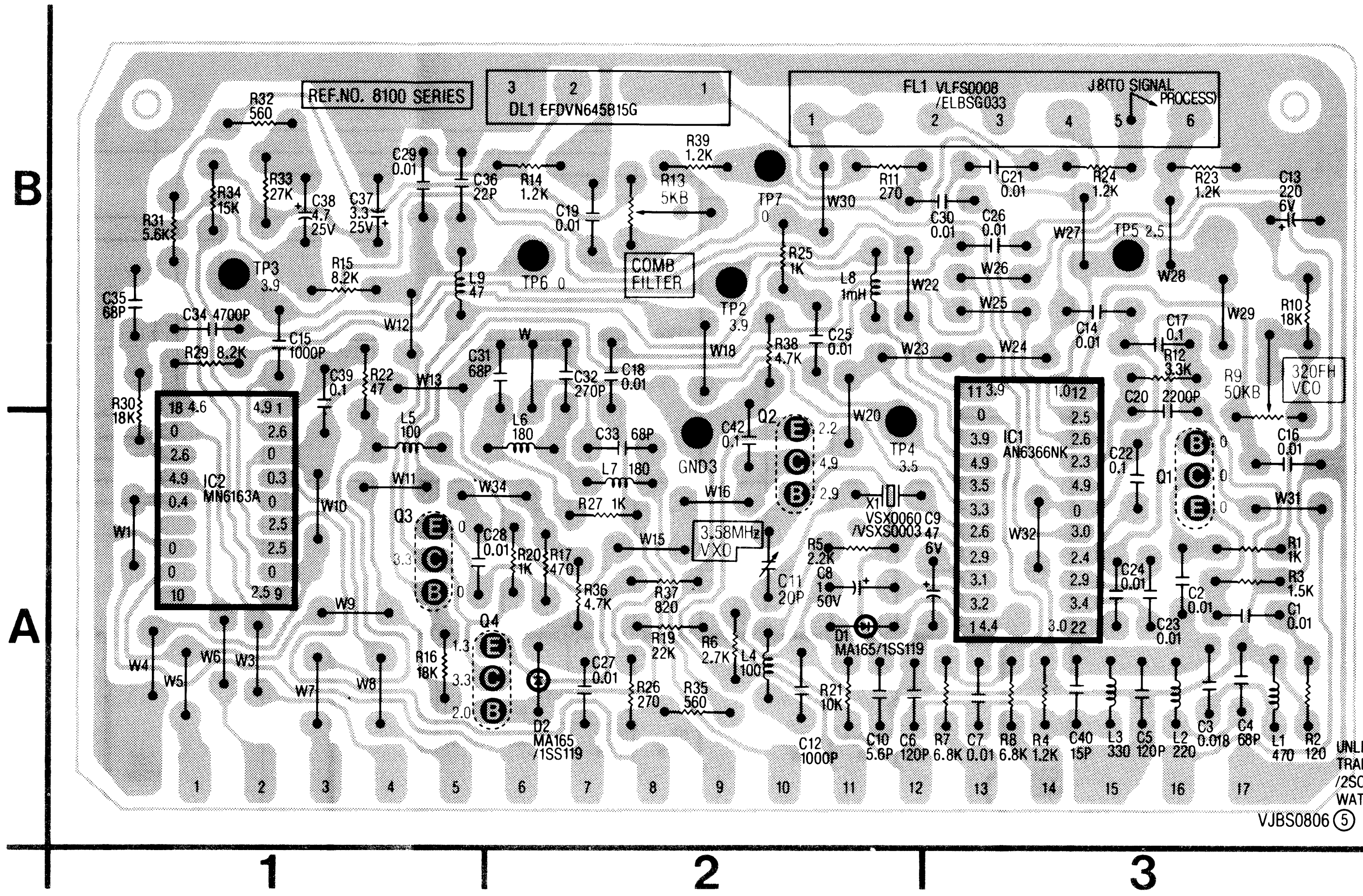
NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 8100 SERIES
SCHEMATIC DIAGRAM···R8102
(R8102 IS ABBREVIATED TO R2)

VOLTAGE MEASUREMENT:
1. CUE, REVIEW,
COLOR BAR SIGNAL IN SLP MODE.
2. OTHERS
COLOR BAR SIGNAL IN SP MODE.
★ : UNMEASURABLE OR UNNECESSARY TO MEASURE.

CHROMINANCE C.B.A. VEPS0806A

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL IN SP REC MODE.

CAUTION:DO NOT BEND OR SPREAD APART THE LUMINANCE AND CHROMINANCE PACKS. BY DOING SO DAMAGE TO THE MAIN C.B.A. OR PINS ON THE PACKS MAY RESULT.


B
A
1
2
3
REF.NO. 8100 SERIES
DL1 EFDVN645B15G
FL1 VLFS0008 /ELBSG033
J8(TO SIGNAL PROCESS)
R32 560
R34 15K
R33 27K
C38 4.7 25V
C37 3.3 25V
C29 0.01
C36 22P
R14 1.2K
R39 1.2K
R13 5KB
TP7
R11 270
C21 0.01
R24 1.2K
R23 1.2K
C13 220 6V
R31 5.6K
TP3 3.9
R15 8.2K
L9 47
TP6 0
COMB FILTER
C19 0.01
R25 1K
TP2 3.9
L8 1mH
W22
C30 0.01
C26 0.01
W26
W27
TP5 2.5
W28
W30
C35 68P
C34 4700P
C15 1000P
R29 8.2K
W12
R38 4.7K
C25 0.01
W25
C14 0.01
C17 0.1
W29
R10 18K
R30 18K
C39 0.1
R22 47
W13
C31 68P
C32 270P
C18 0.01
W18
W23
W24
R12 3.3K
R9 50KB
320FH VCO
IC2 MN6163A
L5 100
L6 180
C33 68P
GND3
C42 0.1
Q2
W20
TP4 3.5
IC1 AN6366NK
C20 2200P
C22 0.1
Q1
C16 0.01
W1
W10
W11
L7 180
W34
R27 1K
W16
X1 VSX0060 /VSXS0003
C9 47 6V
W31
Q3
C28 0.01
R20 1K
R17 470
W15
3.58MHz VXO
R5 2.2K
C11 20P
C8 1 50V
W32
C24 0.01
R1 1K
R3 1.5K
C2 0.01
C1 0.01
C23 0.01
R36 4.7K
R37 820
R19 22K
W9
Q4
R16 18K
R6 2.7K
L4 100
D1 MA165/1SS119
W4
W5
W6
W3
W7
W8
C27 0.01
R26 270
R35 560
R21 10K
D2 MA165 /1SS119
C12 1000P
C10 5.6P
C6 120P
R7 6.8K
C7 0.01
R8 6.8K
R4 1.2K
C40 15P
L3 330
C5 120P
L2 220
C3 0.018
C4 68P
L1 470
R2 120
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
VJBS0806 ⑤

UNLESS OTHERWISE SPECIFIED;
TRANSISTORS ARE 2SD636(Q.R.S.)
/2SC2021M(Q.R.S.) AND
WATTAGE OF RESISTORS ARE 1/4W.

JUMPER (TO SIGNAL PROCESS)

1	PB Ⓗ
2	DOC
3	+5V
4	CUE/REVIEW/SS Ⓗ
5	HSS PULSE
6	HSS
7	VIDEO
8	HEAD SW
9	PB CHROMA
10	REC CHROMA
11	3.58MHz
12	DELAY REC +12V
13	SLP Ⓗ
14	LP/SLP Ⓗ
15	GND
16	PB CHROMA
17	GND

REF.NO.	Q8101			Q8102			Q8103			Q8104								
MODE	E	B	C	E	B	C	E	B	C	E	B	C						
STOP	0	0	0.1	2.3	2.9	4.9	0	0	4.9	0	0	4.9						
REC	0	0	0	2.2	2.9	4.9	0	0	3.3	1.3	2.0	3.3						
PLAY	2.0	2.7	3.4	2.2	2.9	4.9	0.8	1.4	3.2	0	0	3.2						
CUE	1.9	2.6	3.4	2.2	2.9	4.9	0.8	1.4	3.2	0	0	3.2						
REV	2.0	2.7	3.4	2.2	2.9	4.8	0.7	1.4	3.2	0	0	3.2						

REF.NO.	IC8101																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.0	2.9	3.1	2.9	3.1	3.3	3.5	4.9	3.9	2.9	3.9	1.0	2.5	0	1.8	1.9	0	2.9	2.9	2.9
REC	4.4	3.2	3.1	2.9	2.6	3.3	3.5	4.9	3.9	0	3.9	1.0	2.5	2.6	2.3	4.9	0	3.0	2.4	2.9
PLAY	3.0	3.1	3.1	2.9	3.1	3.3	3.5	4.9	3.9	0.1	3.9	1.0	2.5	2.6	1.8	1.9	0	2.9	2.4	3.0
CUE	2.9	3.1	3.1	2.9	3.1	3.3	3.5	4.9	3.9	3.0	3.9	0.7	2.5	2.6	1.8	1.9	0	2.9	2.5	3.0
REV	2.9	3.1	3.1	2.9	3.1	3.3	3.5	4.9	3.9	2.9	3.9	0.9	2.5	2.6	1.8	1.9	0	2.9	2.5	3.0

REF.NO.	IC8101		IC8102																	
MODE	21	22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
STOP	3.3	3.0	4.9	2.6	0	0.3	0	0	2.5	0	2.5	★	0	0	★	0.5	4.9	2.5	0	4.6
REC	3.4	3.0	4.9	2.6	0	0.3	0	2.5	2.5	0	2.5	★	0	0	★	0.4	4.9	2.6	0	4.6
PLAY	3.4	3.0	4.9	2.6	0	0.3	0	2.5	2.5	0	2.5	★	4.7	0	★	0.4	4.9	2.6	0.2	4.6
CUE	3.4	3.0	4.9	2.6	0	0.3	0	2.5	2.5	0	2.5	★	4.7	0	★	0.5	4.9	2.6	3.9	4.6
REV	3.4	3.0	4.9	2.6	0	0.3	0	2.5	2.5	0	2.5	★	4.7	0	★	0.4	4.9	2.5	3.9	4.6

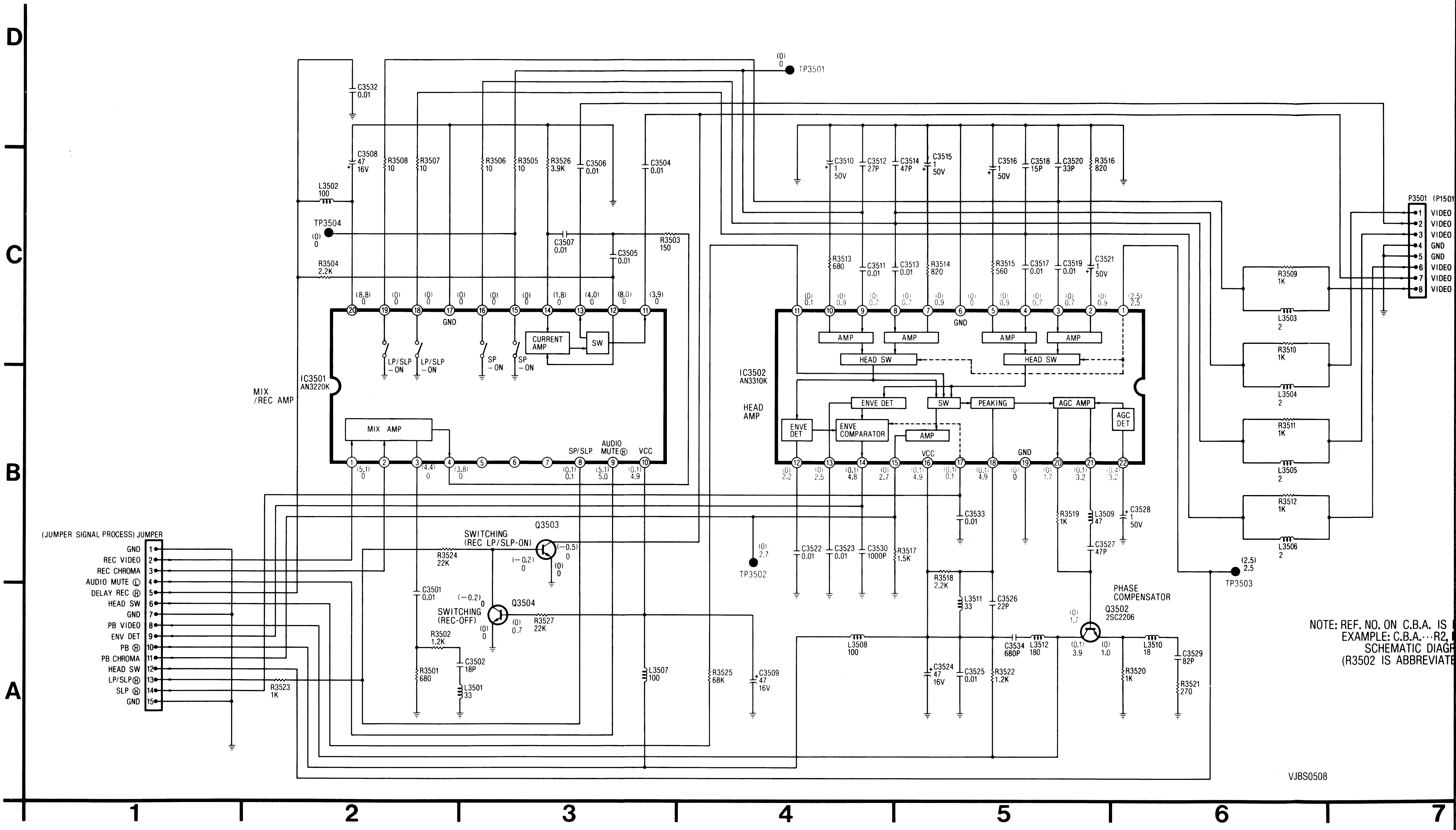
REF.NO. / MODE	TP8102	TP8103	TP8104	TP8105	TP8106	TP8107
STOP	4.0	4.0	3.5	2.6	0	0
REC	3.9	3.9	3.5	2.5	0	0
PLAY	3.9	3.9	0	2.6	0	0
CUE	3.9	3.9	3.4	2.5	0	0
REV	3.9	3.9	3.5	2.5	0	0

HEAD AMP SCHEMATIC DIAGRAM

VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRACKET.

CALLOUTS NEXT TO WIRING PLUGS INDICATE
CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHE
ELECTROSTATICALLY SENSITIVE AND THEREF
HANDLING TECHNIQUES DESCRIBED UNDER T
(ES) DEVICES" SECTION OF THIS SERVICE M

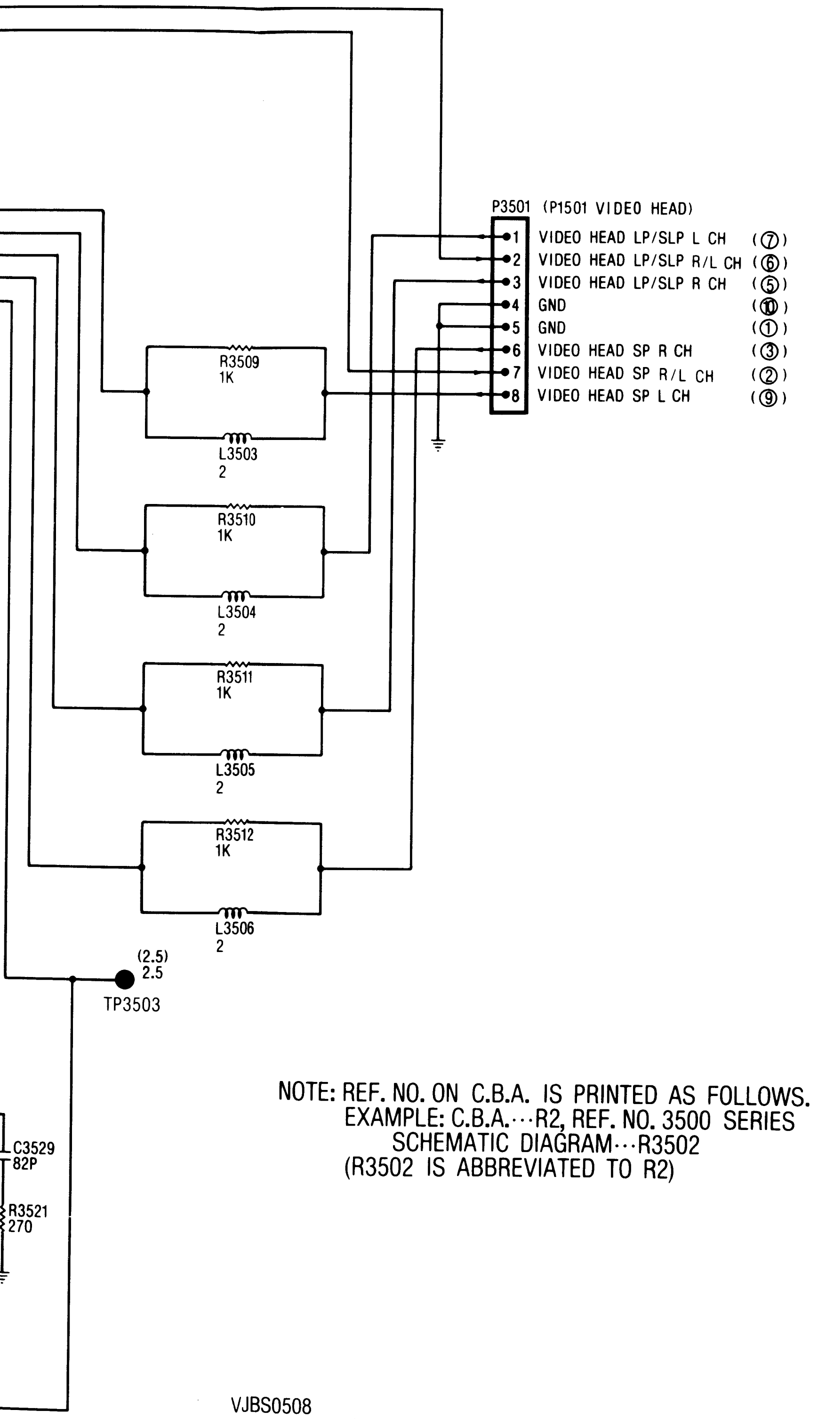

D
C
B
A
1
2
3
4
5
6
7
TP3501
TP3502
TP3503
TP3504
C3532 0.01
C3508 47 16V
R3508 10
R3507 10
R3506 10
R3505 10
R3526 3.9K
C3506 0.01
C3504 0.01
L3502 100
C3507 0.01
C3505 0.01
R3503 150
R3504 2.2K
GND
CURRENT AMP
SW
LP/SLP -ON
SP -ON
IC3501 AN3220K
MIX /REC AMP
MIX AMP
SP/SLP
AUDIO MUTE Ⓗ
VCC
(JUMPER SIGNAL PROCESS) JUMPER
GND
REC VIDEO
REC CHROMA
AUDIO MUTE Ⓛ
DELAY REC Ⓗ
HEAD SW
GND
PB VIDEO
ENV DET
PB Ⓗ
PB CHROMA
HEAD SW
LP/SLP Ⓗ
SLP Ⓗ
GND
R3523 1K
SWITCHING (REC LP/SLP-ON)
Q3503
R3524 22K
SWITCHING (REC-OFF)
Q3504
R3527 22K
C3501 0.01
R3502 1.2K
C3502 18P
R3501 680
L3501 33
L3507 100
R3525 68K
C3509 47 16V
C3510 1 50V
C3512 27P
C3514 47P
C3515 1 50V
C3516 1 50V
C3518 15P
C3520 33P
R3516 820
R3513 680
C3511 0.01
C3513 0.01
R3514 820
R3515 560
C3517 0.01
C3519 0.01
C3521 1 50V
IC3502 AN3310K
HEAD AMP
AMP
HEAD SW
ENVE DET
SW
PEAKING
AGC AMP
AGC DET
ENVE DET
ENVE COMPARATOR
AMP
VCC
GND
C3533 0.01
C3522 0.01
C3523 0.01
C3530 1000P
R3517 1.5K
R3518 2.2K
L3511 33
C3526 22P
L3508 100
C3524 47 16V
C3525 0.01
R3522 1.2K
C3534 680P
L3512 180
R3519 1K
L3509 47
C3528 1 50V
C3527 47P
PHASE COMPENSATOR
Q3502 2SC2206
L3510 18
C3529 82P
R3520 1K
R3521 270
R3509 1K
L3503 2
R3510 1K
L3504 2
R3511 1K
L3505 2
R3512 1K
L3506 2
P3501 (P1501
VIDEO
VIDEO
VIDEO
GND
GND
VIDEO
VIDEO
VIDEO
VJBS0508

NOTE: REF. NO. ON C.B.A. IS
EXAMPLE: C.B.A.···R2,
SCHEMATIC DIAG
(R3502 IS ABBREVIATE

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

HEAD AMP UNIT VEPS0508A1

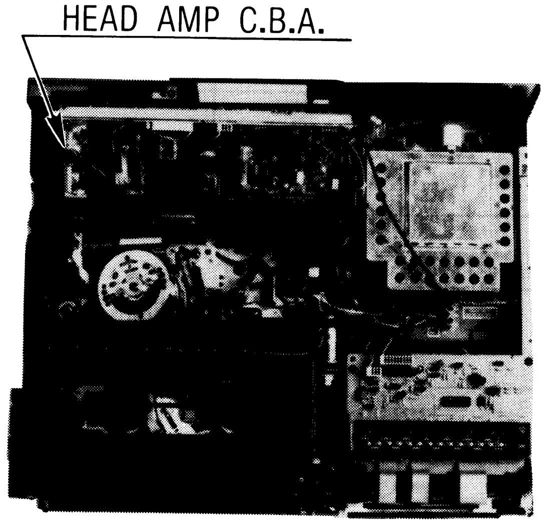
VOLTAGE MEASUREMENT. COLOR BAR SIGNAL IN SP REC MODE.

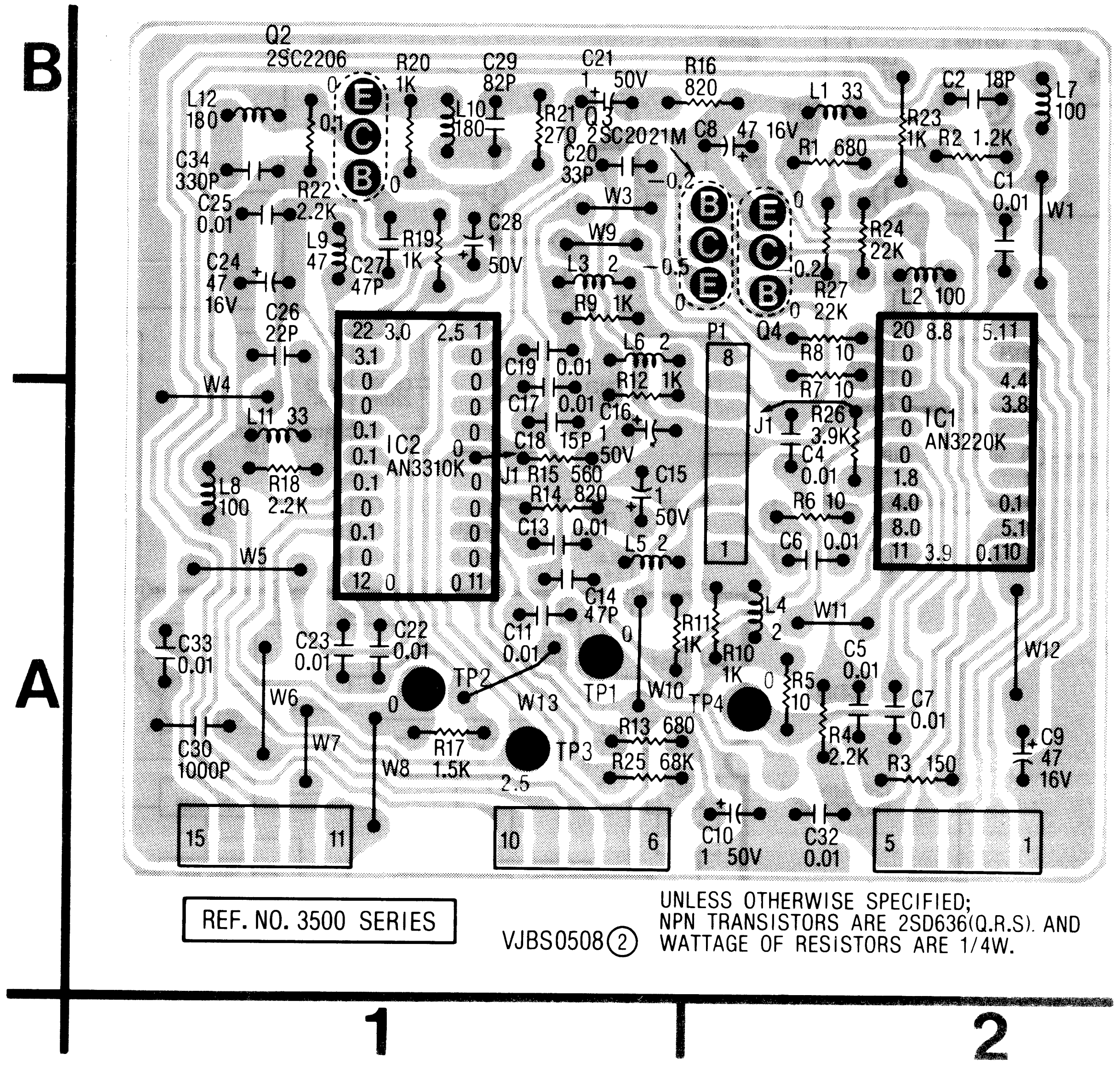

P3501 (P1501 VIDEO HEAD)
1 VIDEO HEAD LP/SLP L CH (⑦)
2 VIDEO HEAD LP/SLP R/L CH (⑥)
3 VIDEO HEAD LP/SLP R CH (⑤)
4 GND (⑩)
5 GND (①)
6 VIDEO HEAD SP R CH (③)
7 VIDEO HEAD SP R/L CH (②)
8 VIDEO HEAD SP L CH (⑨)
R3509 1K
L3503 2
R3510 1K
L3504 2
R3511 1K
L3505 2
R3512 1K
L3506 2
(2.5) 2.5
TP3503
C3529 82P
R3521 270

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 3500 SERIES
SCHEMATIC DIAGRAM···R3502
(R3502 IS ABBREVIATED TO R2)

VJBS0508

HEAD AMP C.B.A.




B
A
1
2
Q2 2SC2206
Q3 2SC2021M
Q4
IC2 AN3310K
IC1 AN3220K
P1
TP1
TP2
TP3
TP4
L12 180
C34 330P
C25 0.01
C24 47 16V
C26 22P
R22 2.2K
L9 47
C27 47P
R19 1K
R20 1K
C29 82P
L10 180
C28 1 50V
R21 270
C21 1 50V
C20 33P
R16 820
C8 47 16V
L1 33
R1 680
R23 1K
R2 1.2K
C2 18P
L7 100
C1 0.01
W1
R24 22K
R27 22K
L2 100
W3
W9
L3 2
R9 1K
L6 2
R12 1K
C19 0.01
C17 0.01
C16 1
C18 15P
R15 560
R14 820
C15 1 50V
C13 0.01
L5 2
C14 47P
C11 0.01
R8 10
R7 10
R26 3.9K
J1
C4 0.01
R6 10
C6 0.01
W4
L11 33
L8 100
R18 2.2K
W5
C33 0.01
C23 0.01
C22 0.01
C30 1000P
W6
W7
W8
R17 1.5K
W13
R11 1K
R10 1K
L4 2
W10
W11
W12
R13 680
R25 68K
R5 10
R4 2.2K
C5 0.01
C7 0.01
R3 150
C9 47 16V
C10 1 50V
C32 0.01
15
11
10
6
5
1
E
C
B
0
0.1
−0.2
−0.5
0.2
2.5
22 3.0 2.5 1
3.1
0.1
12 0
0 11
20 8.8 5.11
4.4
3.8
1.8
4.0
8.0
11 3.9 0.110
0.1
5.1

REF. NO. 3500 SERIES

VJBS0508②

UNLESS OTHERWISE SPECIFIED;
NPN TRANSISTORS ARE 2SD636(Q.R.S). AND
WATTAGE OF RESISTORS ARE 1/4W.

(TO HEAD AMP)

1	GND
2	REC VIDEO
3	REC CHROMA
4	AUDIO MUTE Ⓛ
5	DELAY REC Ⓗ
6	HEAD SW
7	GND
8	PB VIDEO
9	ENT DET
10	PB Ⓗ
11	PB CHROMA
12	HEAD SW PULSE
13	LP/SLP Ⓗ
14	SLP Ⓗ
15	GND

P3501

1	VIDEO HEAD LP/SLP L
2	VIDEO HEAD LP/SLP R
3	VIDEO HEAD LP/SLP R
4	GND
5	GND
6	VIDEO HEAD SP R CH
7	VIDEO HEAD SP R/L C
8	VIDEO HEAD SP L CH

REF.NO. / MODE	Q3502 E	Q3502 B	Q3502 C	Q3503 E	Q3503 B	Q3503 C	Q3504 E	Q3504 B	Q3504 C
STOP	0	0	0	0	−0.1	0	0	0	−0.1
REC	0	0	0	0	−0.1	0	0	0	−0.1
PLAY	0.9	1.6	3.8	0	0	0	0	0.7	0
CUE	0.9	1.6	3.8	0	0	0	0	0.7	0
REV	0.9	1.6	3.8	0	0	0	0	0.7	0

REF.NO.	IC3501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	0	0.4	0	0	0.1	4.7	0	0	0	0	0	0	0	0	0	0	0
REC	4.9	4.9	4.2	3.4	0.7	0.3	0	0.1	4.7	0.1	0.5	7.7	3.8	1.7	0	0	0	0	0	8.5
PLAY	0	0	0	0	0.3	0	0	0.1	4.7	4.8	0	0	0	0	0	0	0	0	0	0
CUE	0	0	0	0	0.3	0.1	0.1	0.1	4.7	4.8	0	0	0	0	0	0	0	0	0	0
REV	0	0	0	0	0.4	0	0	0	4.7	4.8	0	0	0	0	0	0	0	0	0	0

REF.NO.	IC3502																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0
REC	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0.1	0	0
PLAY	2.5	0.9	0.7	0.7	0.9	0	0.9	0.7	0.7	0.9	0	1.9	2.2	4.7	2.6	4.7	0.1	4.7	0	1.6
CUE	2.5	0.9	0.7	0.7	0.9	0	0.9	0.7	0.7	0.9	1.5	2.0	2.0	2.5	2.6	4.6	0.1	4.7	0	1.6
REV	2.5	0.9	0.7	0.2	0.9	0	0.9	0.7	0.7	0.9	1.5	2.0	2.0	2.5	2.6	4.7	0.1	4.7	0	1.6

REF.NO.	IC3501						
MODE	21	22		TP3501	TP3502	TP3503	TP3504
STOP	0	0.3		0	0	4.9	0
REC	0.1	0.3		0	0	2.5	0
PLAY	3.1	3.0		0	2.6	2.5	0
CUE	3.1	3.0		0	2.6	2.5	0
REV	3.1	3.0		0	2.6	2.5	0

VOLTAGE MEASUREMENT:
1. CUE, REVIEW,
COLOR BAR SIGNAL IN SLP MODE.
2. OTHERS
COLOR BAR SIGNAL IN SP MODE.

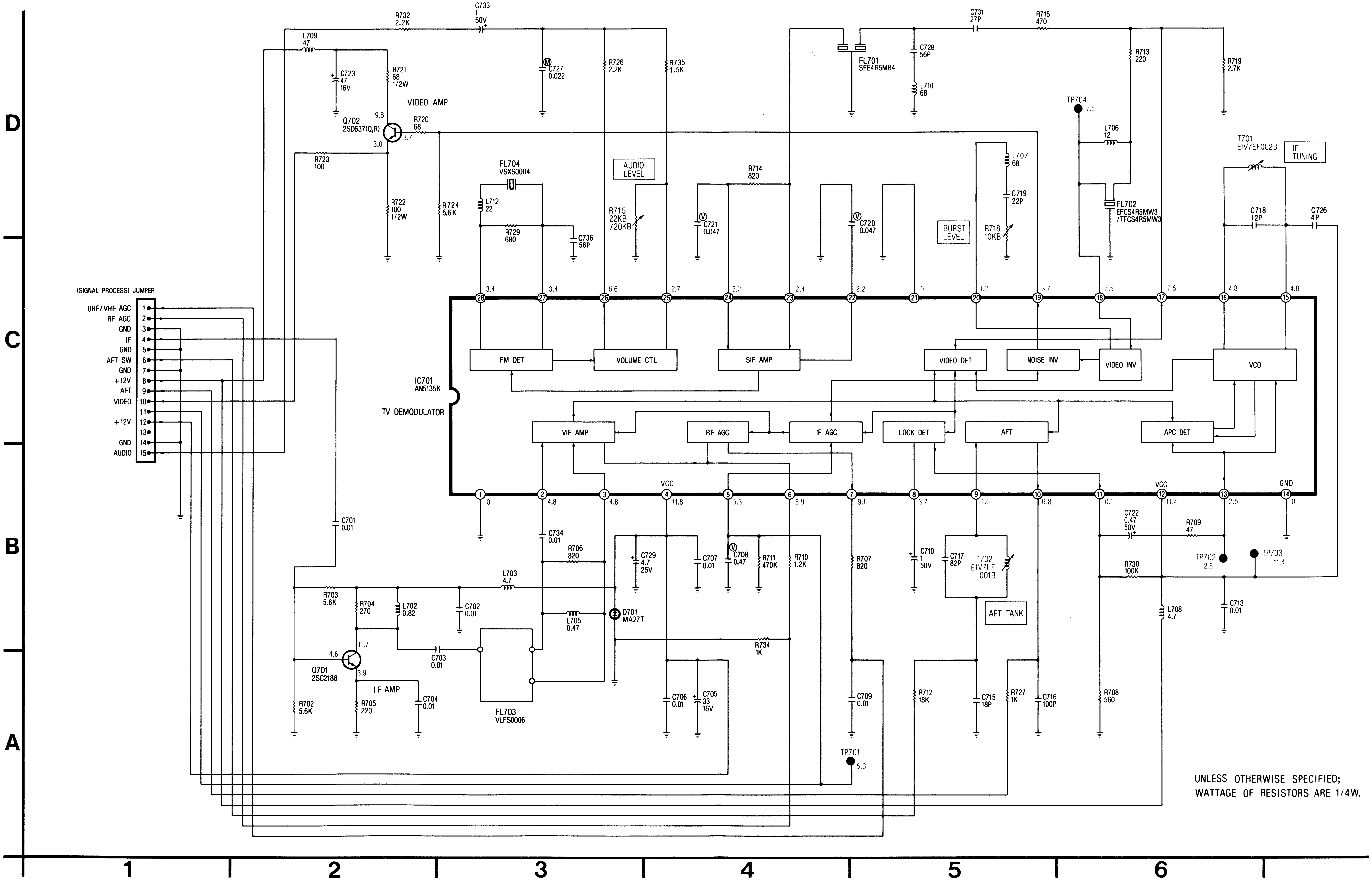
6 7

TV DEMODULATOR SCHEMATIC DIAGRAM

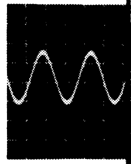
VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN STOP MODE.

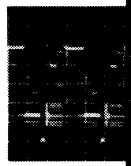
CALLOUTS NEXT TO WIRING PLUGS INDICATE
CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR
ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE
HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATI
(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


D
C
B
A
1
2
3
4
5
6
(SIGNAL PROCESS) JUMPER
UHF/VHF AGC 1
RF AGC 2
GND 3
IF 4
GND 5
AFT SW 6
GND 7
+12V 8
AFT 9
VIDEO 10
11
+12V 12
13
GND 14
AUDIO 15
L709 47
R732 2.2K
C733 1 50V
C723 47 16V
R721 68 1/2W
VIDEO AMP
Q702 2SD637(Q,R)
9.8
3.0
3.7
R720 68
R723 100
R722 100 1/2W
R724 5.6K
C727 0.022
R726 2.2K
R735 1.5K
FL704 VSXS0004
L712 22
R729 680
C736 56P
AUDIO LEVEL
R715 22KB /20KB
R714 820
C721 0.047
C720 0.047
FL701 SFE4R5MB4
C728 56P
L710 68
C731 27P
R716 470
R713 220
R719 2.7K
TP704 7.5
L706 12
L707 68
C719 22P
BURST LEVEL
R718 10KB
FL702 EFCS4R5MW3 /TFCS4R5MW3
T701 EIV7EF002B
IF TUNING
C718 12P
C726 4P
3.4
3.4
6.6
2.7
2.2
2.4
2.2
0
1.2
3.7
7.5
7.5
4.8
4.8
IC701 AN5135K
TV DEMODULATOR
FM DET
VOLUME CTL
SIF AMP
VIDEO DET
NOISE INV
VIDEO INV
VCO
VIF AMP
RF AGC
IF AGC
LOCK DET
AFT
APC DET
VCC
VCC
GND
0
4.8
4.8
11.8
5.3
5.9
9.1
3.7
1.6
6.8
0.1
11.4
2.5
0
C701 0.01
C734 0.01
R706 820
C729 4.7 25V
C707 0.01
C708 0.47
R711 470K
R710 1.2K
R707 820
C710 1 50V
C717 82P
T702 EIV7EF 001B
AFT TANK
C722 0.47 50V
R709 47
TP702 2.5
TP703 11.4
R730 100K
C713 0.01
L708 4.7
L703 4.7
R703 5.6K
R704 270
L702 0.82
C702 0.01
L705 0.47
D701 MA27T
R734 1K
C703 0.01
Q701 2SC2188
4.6
11.7
3.9
IF AMP
C704 0.01
R702 5.6K
R705 220
FL703 VLFS0006
C706 0.01
C705 33 16V
C709 0.01
R712 18K
C715 18P
R727 1K
C716 100P
R708 560
TP701 5.3

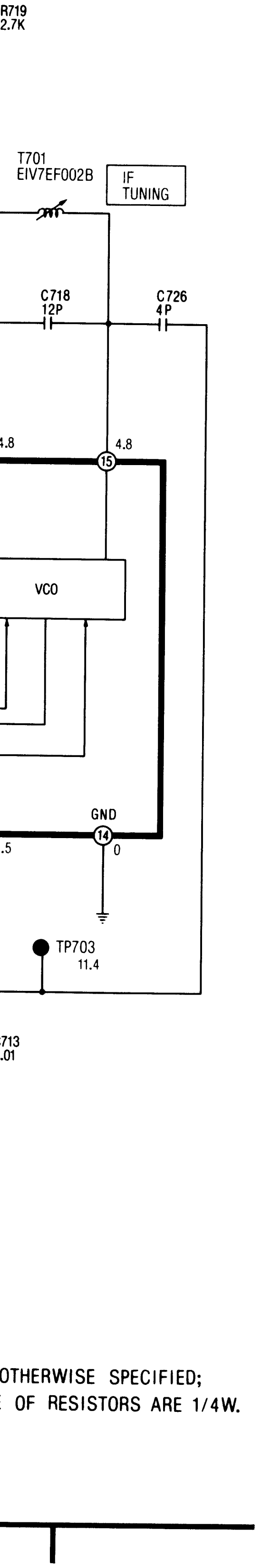
UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS ARE 1/4W.


PIN OF TV DEMODU. C.B.
0.1V/1msec. div.

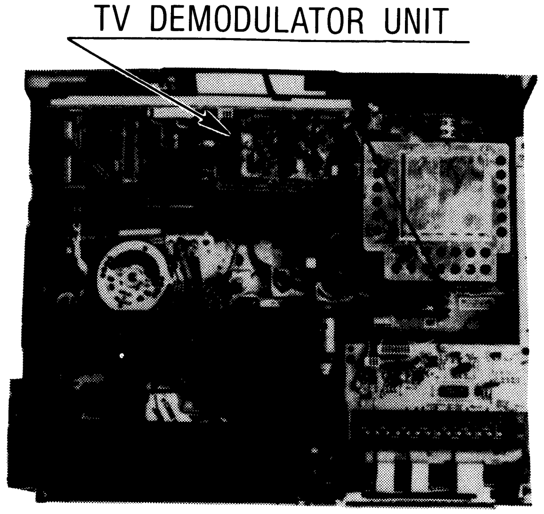

PIN OF TV DEMODU. C.B.
0.2V/200usec. div.

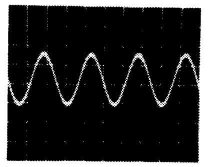
NOTE : REF. NO. ON.
EXAMPLE: C.B.
SCHEMATIC
(R702 IS ABB

IAL NOTE:
INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE
TROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL
LING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE
DEVICES" SECTION OF THIS SERVICE MANUAL.

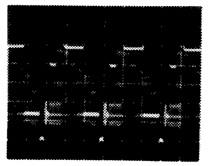

R719
2.7K
T701
EIV7EF002B
IF TUNING
C718
12P
C726
4P
4.8
⑮
4.8
VCO
GND
⑭
.5
0
TP703
11.4
713
.01

OTHERWISE SPECIFIED;
OF RESISTORS ARE 1/4W.


TV DEMODULATOR UNIT



PIN OF TV DEMODU. C.B.A. ⑮ STOP.
0.1V/1msec. div.

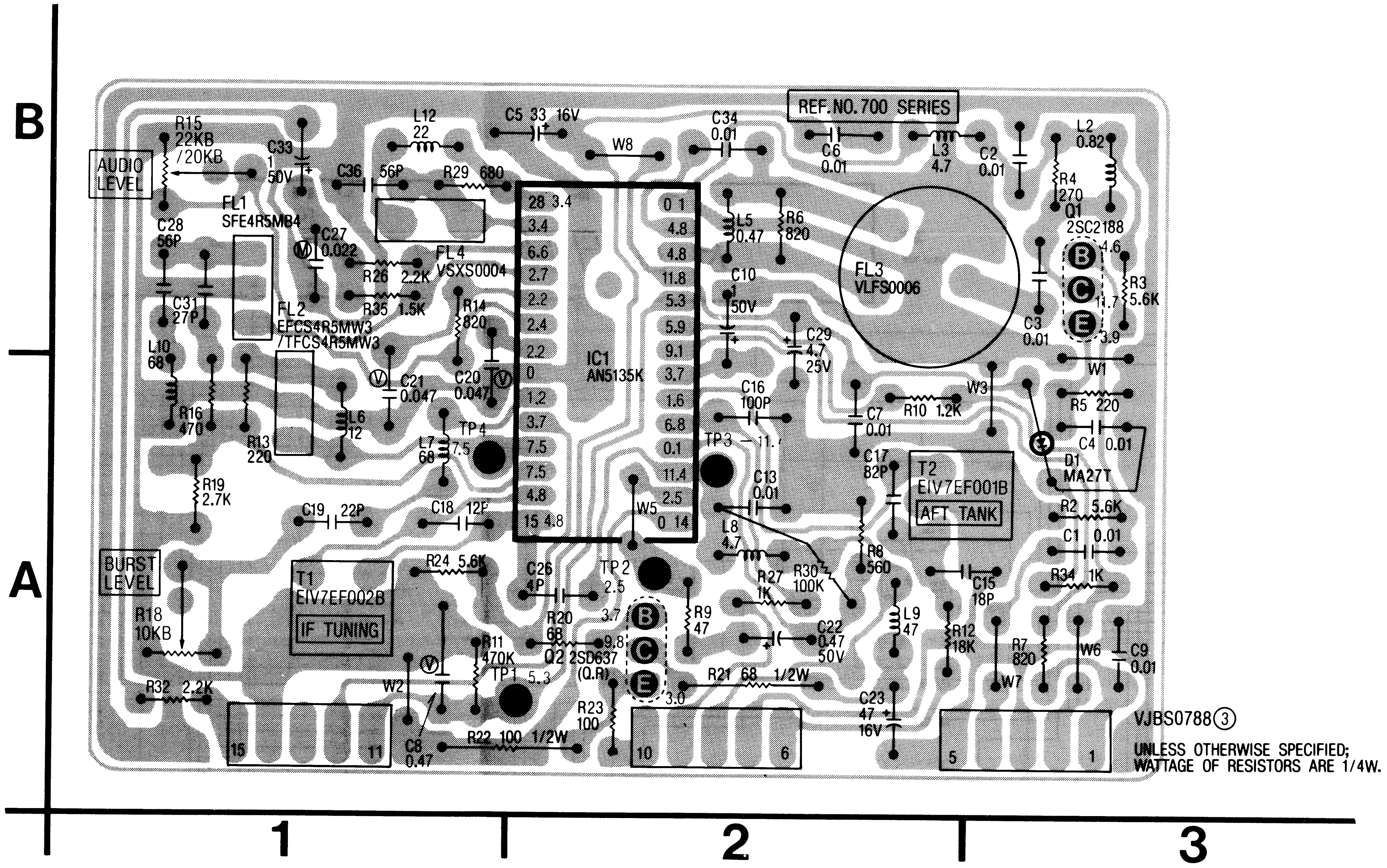


PIN OF TV DEMODU. C.B.A. ⑩ STOP.
0.2V/20Usec. div.

NOTE : REF. NO. ON. C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF.NO. 700 SERIES
SCHEMATIC DIAGRAM···R702
(R702 IS ABBREVIATED TO R2)

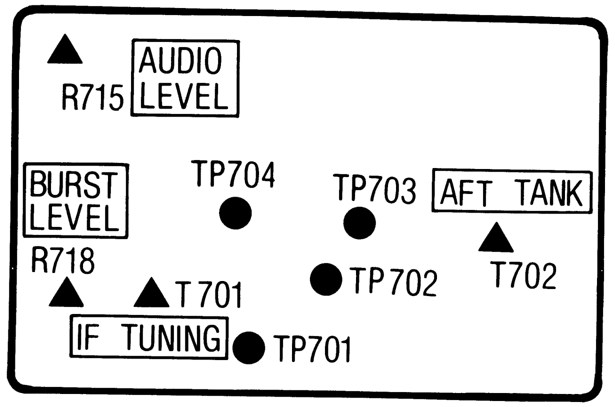
TV DEMODULATOR UNIT VEQS0257

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN STOP MODE.


B
A
1
2
3
REF.NO.700 SERIES
AUDIO LEVEL
R15 22KB /20KB
C33 1 50V
C36 56P
R29 680
L12 22
C5 33 16V
W8
C34 0.01
C6 0.01
L3 4.7
C2 0.01
L2 0.82
R4 270
Q1 2SC2188
B C E
4.6
4.7
3.9
R3 5.6K
C28 56P
FL1 SFE4R5MB4
C27 0.022
FL4 VSXS0004
R26 2.2K
R35 1.5K
C31 27P
FL2 EFCS4R5MW3 /TFCS4R5MW3
R14 820
L10 68
C21 0.047
C20 0.047
R16 470
R13 220
L6 12
L7 68
TP4 7.5
R19 2.7K
C19 22P
C18 12P
IC1 AN5135K
28 3.4
3.4
6.6
2.7
2.2
2.4
2.2
0
1.2
3.7
7.5
7.5
4.8
15 4.8
0 1
4.8
4.8
11.8
5.3
5.9
9.1
3.7
1.6
6.8
0.1
11.4
2.5
0 14
L5 0.47
R6 820
C10 1 50V
C29 4.7 25V
FL3 VLFS0006
C3 0.01
W1
W3
R5 220
C16 100P
C7 0.01
R10 1.2K
C4 0.01
D1 MA27T
TP3 11.4
C13 0.01
C17 82P
T2 EIV7EF001B
AFT TANK
R2 5.6K
C1 0.01
W5
L8 4.7
R27 1K
R30 100K
R8 560
C15 18P
R34 1K
BURST LEVEL
R18 10KB
T1 EIV7EF002B
IF TUNING
R24 5.6K
C26 4P
TP2 2.5
R20 68
3.7
9.8
Q2 2SD637 (Q.R)
R9 47
C22 0.47 50V
L9 47
R12 18K
R7 820
W6
C9 0.01
W7
R11 470K
TP1 5.3
W2
R32 2.2K
R23 100
3.0
R21 68 1/2W
C23 47 16V
C8 0.47
R22 100 1/2W
15
11
10
6
5
1
VJBS0788③

UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS ARE 1/4W.

LOCATIONS OF TEST POINTS & ADJUSTMENT POINTS


R715
AUDIO LEVEL
BURST LEVEL
R718
TP704
TP703
AFT TANK
T702
TP702
T701
IF TUNING
TP701

JUMPER (TO SIGNAL PROCESS)

1	UHF/VHF AGC
2	RF AGC
3	GND
4	IF
5	GND
6	AFT SW
7	GND
8	+12V
9	AFT
10	VIDEO
11	
12	+12V
13	
14	GND
15	AUDIO

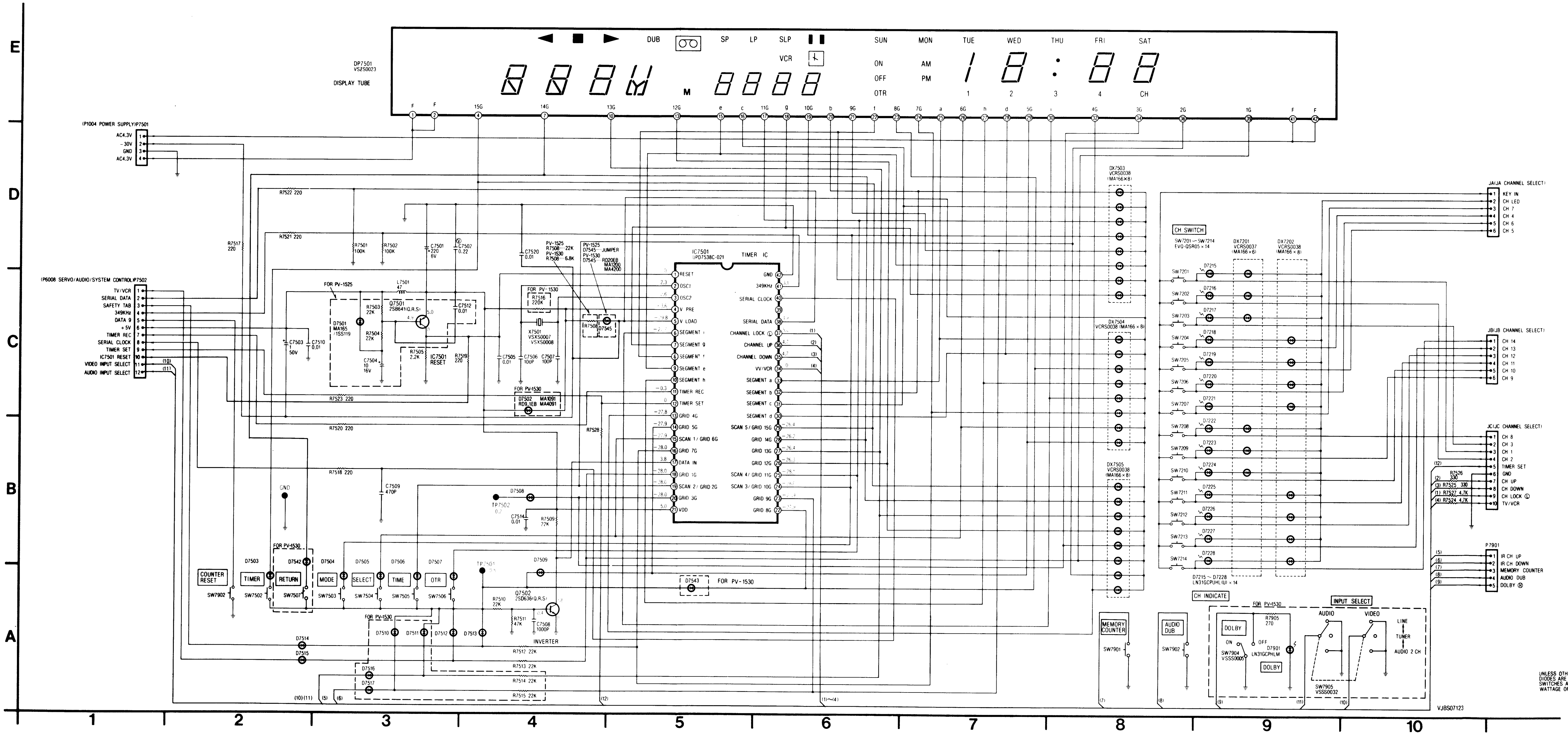
PROGRAMMABLE TIMER SCHEMATIC DIAGRAM

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN STOP MODE

CALLOUTS NEXT TO WIRING PLUGS INDICATE
CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

IC7501 KEY

SCAN OUT
PIN NO.
15 (SCAN 1)
19 (SCAN 2)
24 (SCAN 3)
25 (SCAN 4)
29 (SCAN 5)



E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
DP7501
VSZ50023
DISPLAY TUBE
DUB
SP
LP
SLP
VCR
SUN
MON
TUE
WED
THU
FRI
SAT
ON
OFF
OTR
AM
PM
CH
(P1004 POWER SUPPLY)P7501
AC4.3V
-30V
GND
AC4.3V
(P6008 SERVO/AUDIO/SYSTEM CONTROL)P7502
TV/VCR
SERIAL DATA
SAFETY TAB
349KHz
DATA 9
+5V
TIMER REC
SERIAL CLOCK
TIMER SET
IC7501 RESET
VIDEO INPUT SELECT
AUDIO INPUT SELECT
IC7501
μPD7538C-021
TIMER IC
RESET
OSC1
OSC2
V PRE
V LOAD
SEGMENT
TIMER REC
TIMER SET
GRID 4G
GRID 5G
SCAN 1/GRID 6G
GRID 7G
DATA IN
GRID 1G
SCAN 2/GRID 2G
GRID 3G
VDD
GND
349KHz
SERIAL CLOCK
SERIAL DATA
CHANNEL LOCK
CHANNEL UP
CHANNEL DOWN
VV/VCR
SEGMENT a
SEGMENT b
SEGMENT c
SEGMENT d
SCAN 5/GRID 15G
GRID 14G
GRID 13G
GRID 12G
SCAN 4/GRID 11G
SCAN 3/GRID 10G
GRID 9G
GRID 8G
FOR PV-1525
Q7501
2SB641(Q,R,S)
FOR PV-1530
X7501
VSX5007
VSX5008
D7502
FOR PV-1530
COUNTER RESET
TIMER
RETURN
MODE
SELECT
TIME
OTR
SW7902
SW7502
SW7507
SW7503
SW7504
SW7505
SW7506
Q7502
2SD636(Q,R,S)
INVERTER
TP7502
TP7501
D7543
FOR PV-1530
DX7503
VCRS0038
(MA166×8)
DX7504
VCRS0038 (MA166×8)
DX7505
VCRS0038
(MA166×8)
CH SWITCH
SW7201~SW7214
EVQ-QS05×14
DX7201
VCRS0037
(MA166×6)
DX7202
VCRS0038
(MA166×8)
D7215~D7228
LN31GCPUHL(U)×14
CH INDICATE
JA(JA CHANNEL SELECT)
KEY IN
CH LED
CH 7
CH 4
CH 6
CH 5
JB(JB CHANNEL SELECT)
CH 14
CH 13
CH 12
CH 11
CH 10
CH 9
JC(JC CHANNEL SELECT)
CH 8
CH 3
CH 1
CH 2
TIMER SET
GND
CH UP
CH DOWN
CH LOCK
TV/VCR
P7901
IR CH UP
IR CH DOWN
MEMORY COUNTER
AUDIO DUB
DOLBY
MEMORY COUNTER
SW7901
AUDIO DUB
SW7902
FOR PV-4530
DOLBY
SW7904
VSSS0027
LN31GCPHLM
INPUT SELECT
AUDIO
VIDEO
LINE
TUNER
AUDIO 2 CH
SW7905
VSSS0032
UNLESS OTHERWISE SPECIFIED:
DIODES ARE MA166.
SWITCHES ARE EVQ-QJ104K AND
WATTAGE OF RESISTORS ARE 1/4W.
VJBS07123

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 7200 SERIES
SCHEMATIC DIAGRAM···R7202
(R7202 IS ABBREVIATED TO R2)

NOTE : REF. NO. ON. C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF.NO. 7900 SERIES
SCHEMATIC DIAGRAM···R7902
(R7902 IS ABBREVIATED TO R2)

CALLOUTS NEXT TO WIRING PLUGS INDICATE
CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

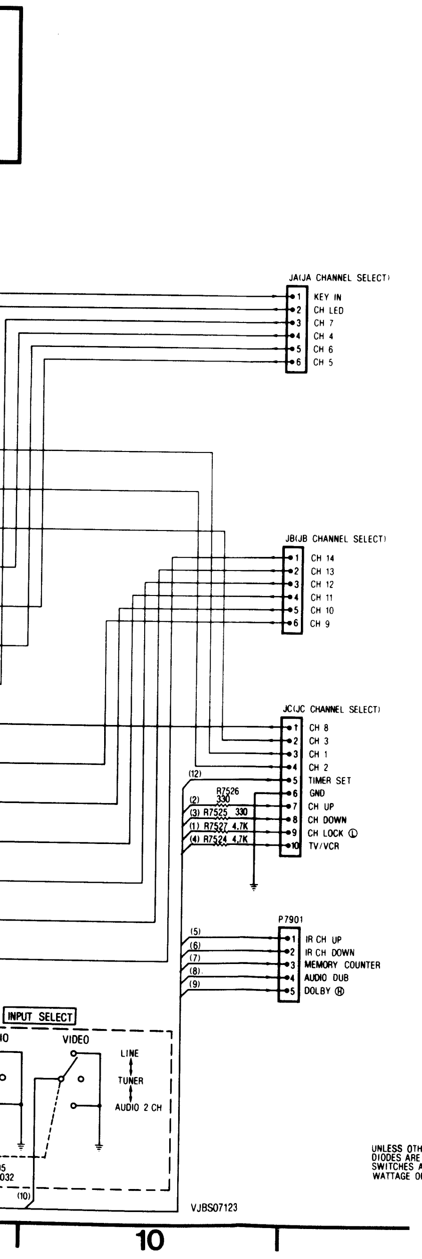
PROGRAMMABLE TIMER C.B.A. VEPS07123A1 (PV-1525)
VEPS07123E1 (PV-1530)

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN STOP MODE

IC7501 KEY MATRIX UPC7538C

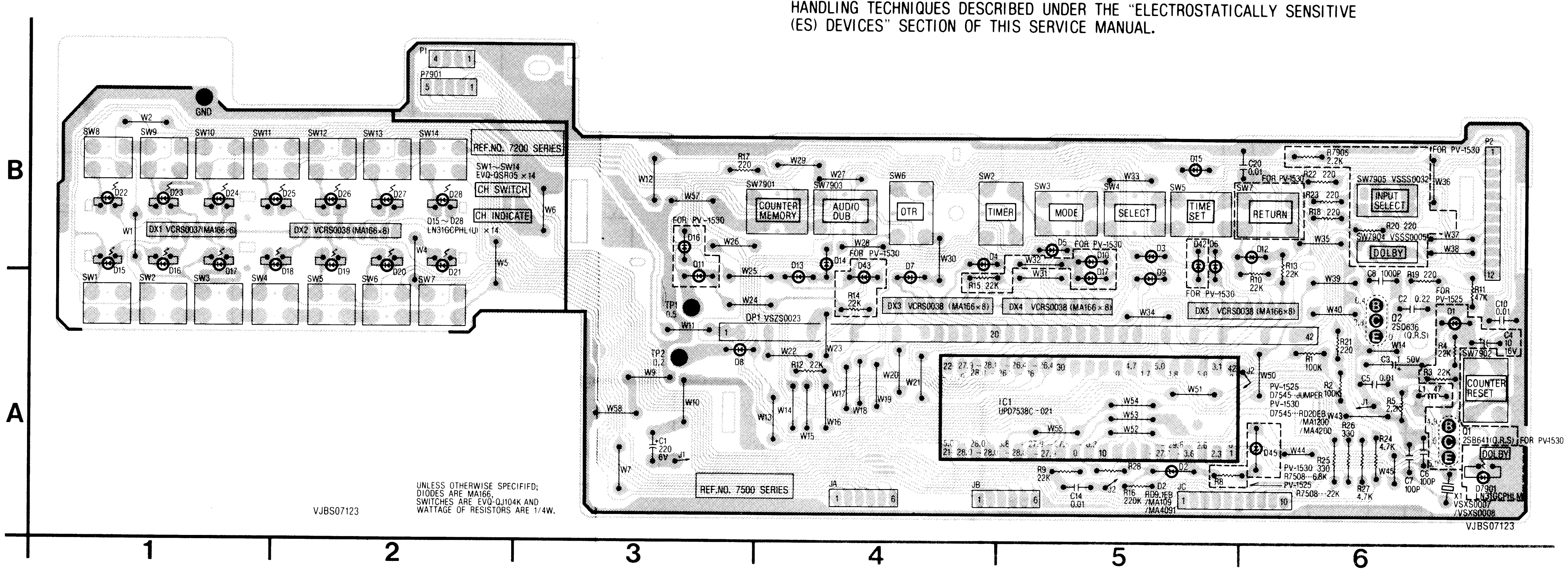
SCAN OUT	DATA IN
PIN NO.	17 (DATA IN)
15 (SCAN 1)	SELECT
19 (SCAN 2)	TIME SET
24 (SCAN 3)	MODE
25 (SCAN 4)	OTR
29 (SCAN 5)	TIMER

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


JA(JA CHANNEL SELECT)
1 KEY IN
2 CH LED
3 CH 7
4 CH 4
5 CH 6
6 CH 5
JB(JB CHANNEL SELECT)
1 CH 14
2 CH 13
3 CH 12
4 CH 11
5 CH 10
6 CH 9
JC(JC CHANNEL SELECT)
1 CH 8
2 CH 3
3 CH 1
4 CH 2
5 TIMER SET
6 GND
7 CH UP
8 CH DOWN
9 CH LOCK Ⓛ
10 TV/VCR
(12)
(2) R7526 330
(3) R7525 330
(1) R7527 4.7K
(4) R7524 4.7K
P7901
(5) 1 IR CH UP
(6) 2 IR CH DOWN
(7) 3 MEMORY COUNTER
(8) 4 AUDIO DUB
(9) 5 DOLBY Ⓗ
INPUT SELECT
VIDEO
LINE
TUNER
AUDIO 2 CH
(10)
10

UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA166,
SWITCHES ARE EVQ-QJ104K AND
WATTAGE OF RESISTORS ARE 1/4W.

VJBS07123

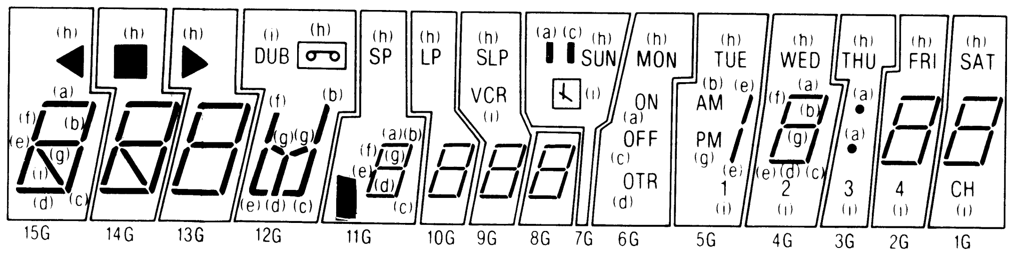

B
A
1
2
3
4
5
6
GND
P1
P7901
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
SW11
SW12
SW13
SW14
REF.NO. 7200 SERIES
SW1~SW14
EVQ-QSR05 × 14
CH SWITCH
CH INDICATE
D15~D28
LN31GCPHL(U) × 14
DX1 VCRS0037(MA166×6)
DX2 VCRS0038 (MA166×8)
W1
W2
W4
W5
W6
SW7901
COUNTER MEMORY
SW7903
AUDIO DUB
SW6
OTR
SW2
TIMER
SW3
MODE
SW4
SELECT
SW5
TIME SET
SW7
RETURN
SW7905 VSSS0032
INPUT SELECT
SW7904 VSSS0005
DOLBY
SW7902
COUNTER RESET
FOR PV-1530
FOR PV-1525
R17 220
TP1 0.5
TP2 0.2
DP1 VSZS0023
DX3 VCRS0038 (MA166×8)
DX4 VCRS0038 (MA166×8)
DX5 VCRS0038 (MA166×8)
R12 22K
R14 22K
R15 22K
C1 220 6V
IC1
UPD7538C-021
REF.NO. 7500 SERIES
JA
JB
JC
R9 22K
R28
C14 0.01
R16 220K
D2 RD9.1EB /MA109 /MA4091
R7905 2.2K
C20 0.01
R22 220
R23 220
R18 220
R20 220
R13 22K
R10 22K
C8 1000P
R19 220
Q2 2SD636 (Q.R.S)
C2 0.22
R11 47K
C10 0.01
C4 10 16V
R21 220
R1 100K
C3 1 50V
R4 22K
R3 22K
C5 0.01
L1 47
R2 100K
R5 2.2K
PV-1525 D7545--JUMPER
PV-1530 D7545--RD20EB /MA1200 /MA4200
R26 330
R24 4.7K
R25 330
PV-1530 R7508--6.8K
PV-1525 R7508--22K
R27 4.7K
C7 100P
C6 100P
Q1 2SB641(Q.R.S) FOR PV1530
DOLBY
D7901 LN31GCPHLM
X1 VSXS0007 /VSXS0008
P2

UNLESS OTHERWISE SPECIFIFD;
DIODES ARE MA166,
SWITCHES ARE EVQ-QJ104K AND
WATTAGE OF RESISTORS ARE 1/4W.

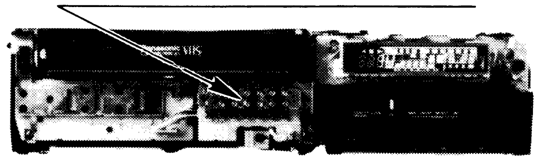
VJBS07123

VJBS07123

DP 7501 DISPLAY TUBE CONNECTION


(h)
◀
■
▶
DUB
SP
LP
SLP
VCR
SUN
MON
TUE
WED
THU
FRI
SAT
AM
PM
ON
OFF
OTR
1
2
3
4
CH
(a)
(b)
(c)
(d)
(e)
(f)
(g)
(i)
15G
14G
13G
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G

PROGRAMMABLE TIMER C.B.A.



PIN NO.	CONNECTION
1	FILAMENT
2	FILAMENT
3	———
4	GRID 15G
5	———
6	———
7	GRID 14G
8	———
9	———
10	GRID 13G

PIN NO.	CONNECTION
11	———
12	———
13	GRID 12G
14	———
15	SEGMENT e
16	SEGMENT c
17	GRID 11G
18	SEGMENT g
19	GRID 10G
20	SEGMENT b

PIN NO.	CONNECTION
21	GRID 9G
22	SEGMENT f
23	GRID 8G
24	GRID 7G
25	SEGMENT a
26	GRID 6G
27	SEGMENT h
28	SEGMENT d
29	GRID 5G
30	———

PIN NO.	CONNECTION
31	———
32	GRID 4G
33	———
34	GRID 3G
35	———
36	GRID 2G
37	———
38	———
39	GRID 1G
40	———
41	FILAMENT
42	FILAMENT

JA

1	KEY IN
2	CH LED
3	CH 7
4	CH 4
5	CH 6
6	CH 5

JB

1	CH 14
2	CH 13
3	CH 12
4	CH 11
5	CH 10
6	CH 9

JC

1	CH 8
2	CH 3
3	CH 1
4	CH 2
5	TIMER SET
6	GND
7	CH UP
8	CH DOWN
9	CH LOCK Ⓛ
10	TV/VCR

P7501

1	AC4.3V
2	−30V
3	GND
4	AC4.3V

P7502

1	TV/VCR
2	SERIAL DATA
3	SAFETY TAB
4	349KHz
5	DATA 9
6	+5V
7	TIMER REC
8	SERIAL CLOCK
9	TIMER SET
10	IC7501 RESET
11	VIDEO INPUT SELECT
12	AUDIO INPUT SELECT

P7901

1	IR CH UP
2	IR CH DOWN
3	MEMORY COUNTER
4	AUDIO DUB
5	DOLBY Ⓗ

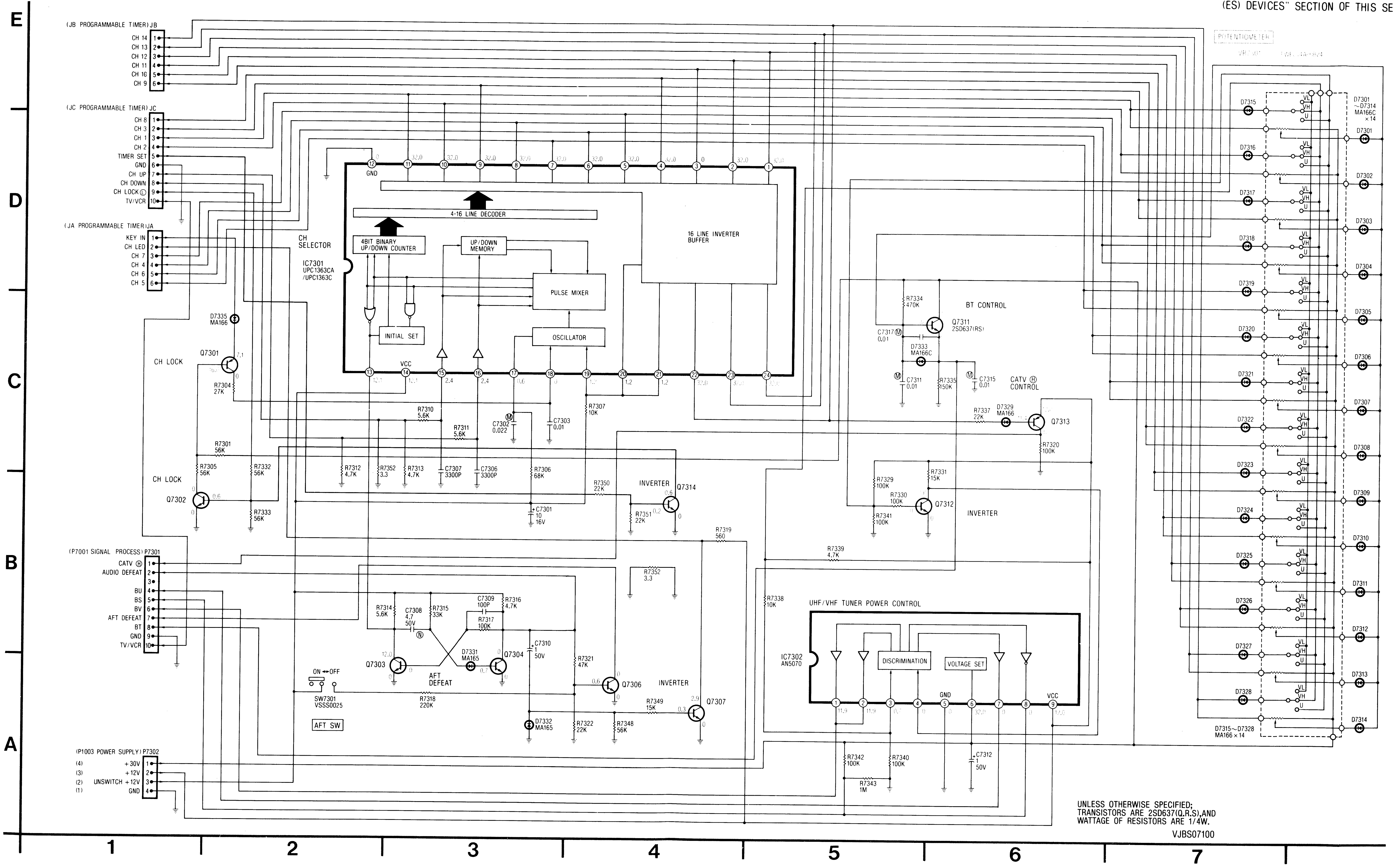
LOWS.
S

CHANNEL SELECT SCHEMATIC DIAGRAM

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN STOP MODE.

CALLOUTS NEXT TO WIRING PLUGS INDICATE
CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SE
ELECTROSTATICALLY SENSITIVE AND THEREFORE
HANDLING TECHNIQUES DESCRIBED UNDER THE "E
(ES) DEVICES" SECTION OF THIS SERVICE MANUA


E
D
C
B
A
1
2
3
4
5
6
7
(JB PROGRAMMABLE TIMER) JB
CH 14
CH 13
CH 12
CH 11
CH 10
CH 9
(JC PROGRAMMABLE TIMER) JC
CH 8
CH 3
CH 1
CH 2
TIMER SET
GND
CH UP
CH DOWN
CH LOCK Ⓒ
TV/VCR
(JA PROGRAMMABLE TIMER) JA
KEY IN
CH LED
CH 7
CH 4
CH 6
CH 5
CH SELECTOR
IC7301
UPC1363CA
/UPC1363C
GND
VCC
4-16 LINE DECODER
4BIT BINARY UP/DOWN COUNTER
UP/DOWN MEMORY
PULSE MIXER
INITIAL SET
OSCILLATOR
16 LINE INVERTER BUFFER
D7335
MA166
Q7301
CH LOCK
R7304
27K
R7301
56K
R7305
56K
R7332
56K
R7333
56K
CH LOCK
Q7302
R7310
5.6K
R7311
5.6K
C7302
0.022
C7303
0.01
R7307
10K
R7312
4.7K
R7352
3.3
R7313
4.7K
C7307
3300P
C7306
3300P
R7306
68K
C7301
10
16V
R7350
22K
INVERTER
Q7314
R7351
22K
R7319
560
(P7001 SIGNAL PROCESS) P7301
CATV Ⓗ
AUDIO DEFEAT
BU
BS
BV
AFT DEFEAT
BT
GND
TV/VCR
R7352
3.3
R7314
5.6K
C7308
4.7
50V
R7315
33K
C7309
100P
R7316
4.7K
R7317
100K
C7310
1
50V
Q7303
D7331
MA165
Q7304
AFT DEFEAT
R7321
47K
Q7306
INVERTER
ON ↔ OFF
SW7301
VSS0025
R7318
220K
AFT SW
R7349
15K
Q7307
D7332
MA165
R7322
22K
R7348
56K
(P1003 POWER SUPPLY) P7302
(4) +30V
(3) +12V
(2) UNSWITCH +12V
(1) GND
R7334
470K
BT CONTROL
Q7311
2SD637(RS)
C7317
0.01
D7333
MA166C
C7311
0.01
R7335
150K
C7315
0.01
CATV Ⓗ CONTROL
R7337
22K
D7329
MA166
Q7313
R7320
100K
R7329
100K
R7331
15K
R7330
100K
Q7312
INVERTER
R7341
100K
R7339
4.7K
R7338
10K
UHF/VHF TUNER POWER CONTROL
IC7302
AN5070
DISCRIMINATION
VOLTAGE SET
GND
VCC
R7342
100K
R7340
100K
R7343
1M
C7312
1
50V
POTENTIOMETER
D7301
~D7314
MA166C
×14
D7315
D7316
D7317
D7318
D7319
D7320
D7321
D7322
D7323
D7324
D7325
D7326
D7327
D7328
D7315~D7328
MA166×14
D7301
D7302
D7303
D7304
D7305
D7306
D7307
D7308
D7309
D7310
D7311
D7312
D7313
D7314
VL
VH
U

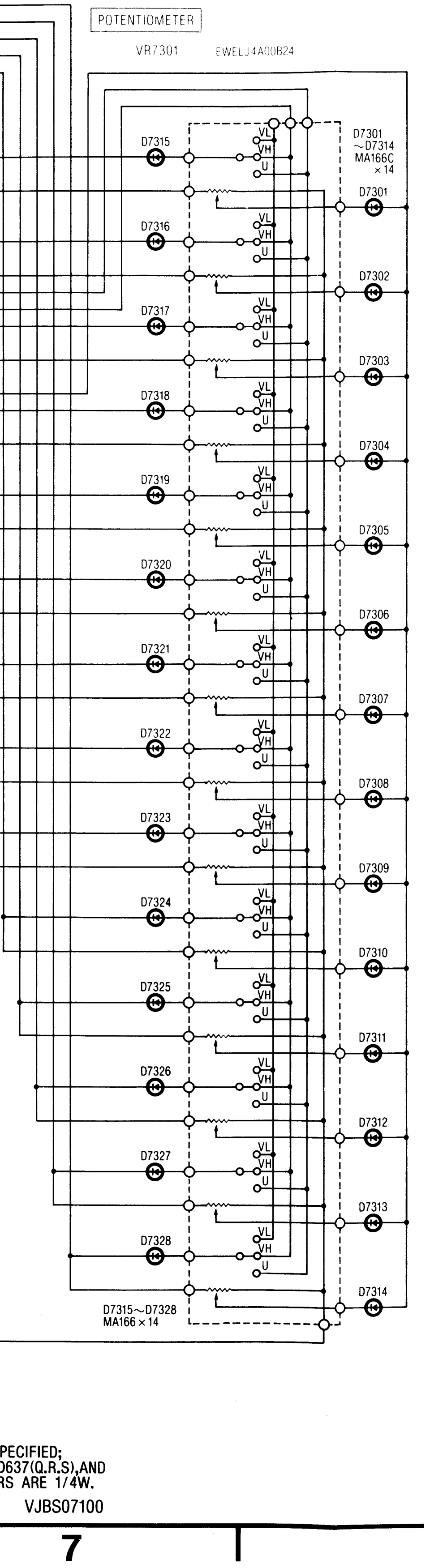
UNLESS OTHERWISE SPECIFIED;
TRANSISTORS ARE 2SD637(Q.R.S),AND
WATTAGE OF RESISTORS ARE 1/4W.

VJBS07100

NOTE: REF. N
EXAM
S
(R730

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

CHANNEL SELECT C.B.A. VEPS07100C1


POTENTIOMETER
VR7301 EWEL J4A00B24
D7301 ~D7314 MA166C ×14
D7301
D7302
D7303
D7304
D7305
D7306
D7307
D7308
D7309
D7310
D7311
D7312
D7313
D7314
D7315
D7316
D7317
D7318
D7319
D7320
D7321
D7322
D7323
D7324
D7325
D7326
D7327
D7328
VL
VH
U
D7315~D7328 MA166×14
7

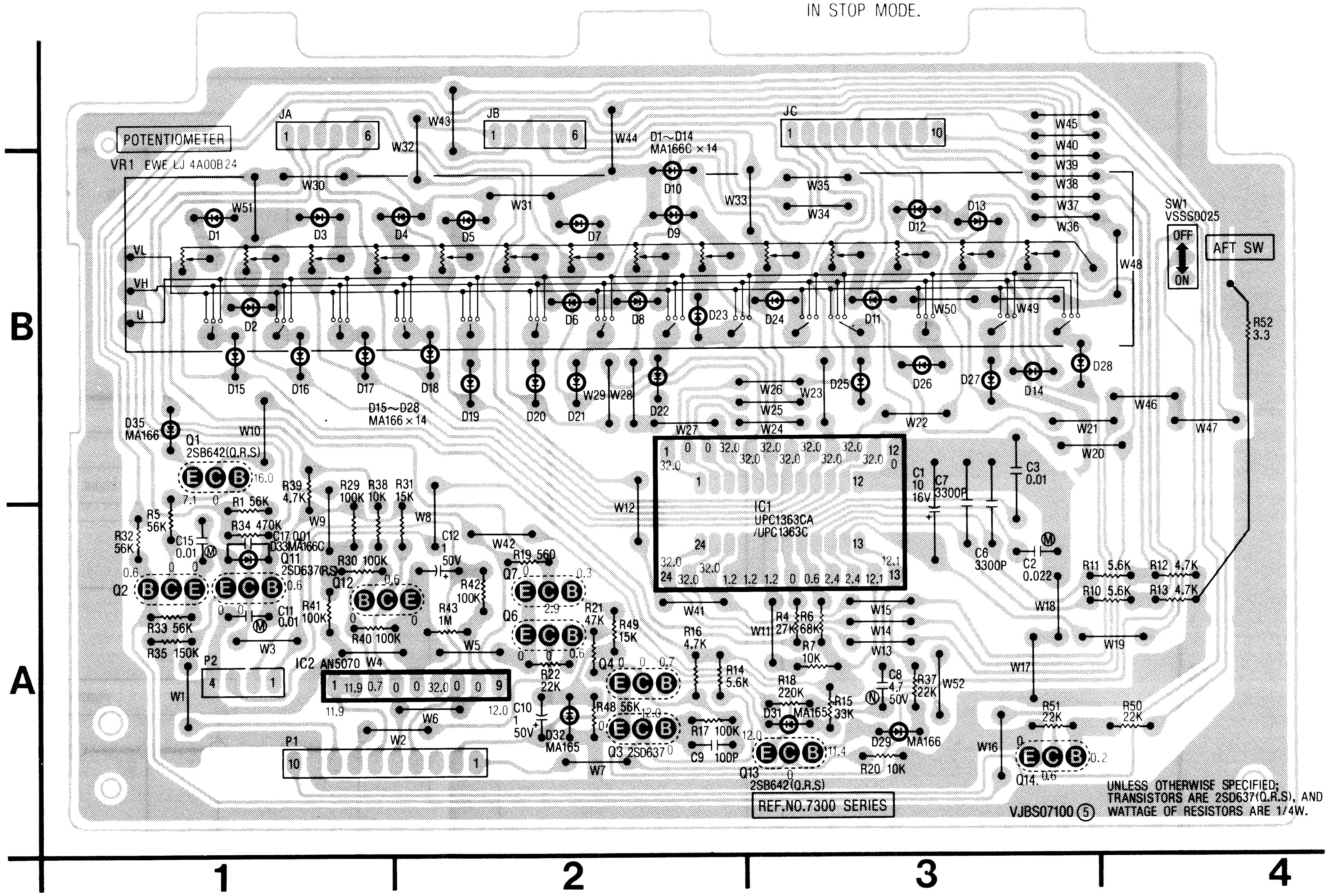
PECIFIED;
D637(Q.R.S),AND
RS ARE 1/4W.
VJBS07100

CHANNEL SELECT SCHEMATIC DIAGRAM	
Q7301	2-C
Q7302	1-B
Q7303	3-A
Q7304	3-A
Q7306	4-A
Q7307	4-A
Q7311	6-C
Q7312	5-B
Q7313	6-C
Q7314	4-B

CHANNEL SELECT C.B.A.	
Q 1	1-B
Q 2	1-A
Q 3	2-A
Q 4	2-A
Q 6	2-A
Q 7	2-A
Q11	1-A
Q12	1-A
Q13	3-A
Q14	3-A

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.···R2, REF. NO. 7300 SERIES
SCHEMATIC DIAGRAM···R7302
(R7302 IS ABBREVIATED TO R2)

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL
IN STOP MODE.


POTENTIOMETER
VR1 EWE LJ 4A00B24
JA
JB
JC
D1~D14 MA166C ×14
D15~D28 MA166×14
SW1 VSSS0025
OFF
ON
AFT SW
R52 3.3
Q1 2SB642(Q.R.S)
D35 MA166
IC1 UPC1363CA /UPC1363C
IC2 AN5070
Q11 2SD637(Q.R.S)
Q13 2SB642(Q.R.S)
Q3 2SD637
D31 MA165
D29 MA166
D32 MA165
R5 56K
R32 56K
R1 56K
R34 470K
R39 4.7K
R29 100K
R38 10K
R31 15K
R30 100K
R40 100K
R41 100K
R42 100K
R43 1M
R33 56K
R35 150K
R19 560
R21 47K
R49 15K
R22 22K
R48 56K
R17 100K
R16 4.7K
R14 5.6K
R18 220K
R15 33K
R4 27K
R6 68K
R7 10K
R37 22K
R20 10K
R11 5.6K
R12 4.7K
R10 5.6K
R13 4.7K
R51 22K
R50 22K
C1 10 16V
C7 3300P
C3 0.01
C6 3300P
C2 0.022
C8 4.7 50V
C9 100P
C10 1 50V
C11 0.01
C12 1 50V
C15 0.01
C17 0.01
P1
P2
VL
VH
U
E C B
REF.NO.7300 SERIES
VJBS07100 ⑤
B
A
1
2
3
4

UNLESS OTHERWISE SPECIFIED;
TRANSISTORS ARE 2SD637(Q.R.S), AND
WATTAGE OF RESISTORS ARE 1/4W.

P7301

1	CATV Ⓗ
2	AUDIO DEFEAT
3	
4	BU
5	BS
6	BV
7	AFT DEFEAT
8	BT
9	GND
10	TV/VCR

P7302

1	+30V
2	+12V
3	UNSWITCH +12V
4	GND

JA

1	KEY IN
2	CH LED
3	CH 7
4	CH 4
5	CH 6
6	CH 5

JB

1	CH 14
2	CH 13
3	CH 12
4	CH 11
5	CH 10
6	CH 9

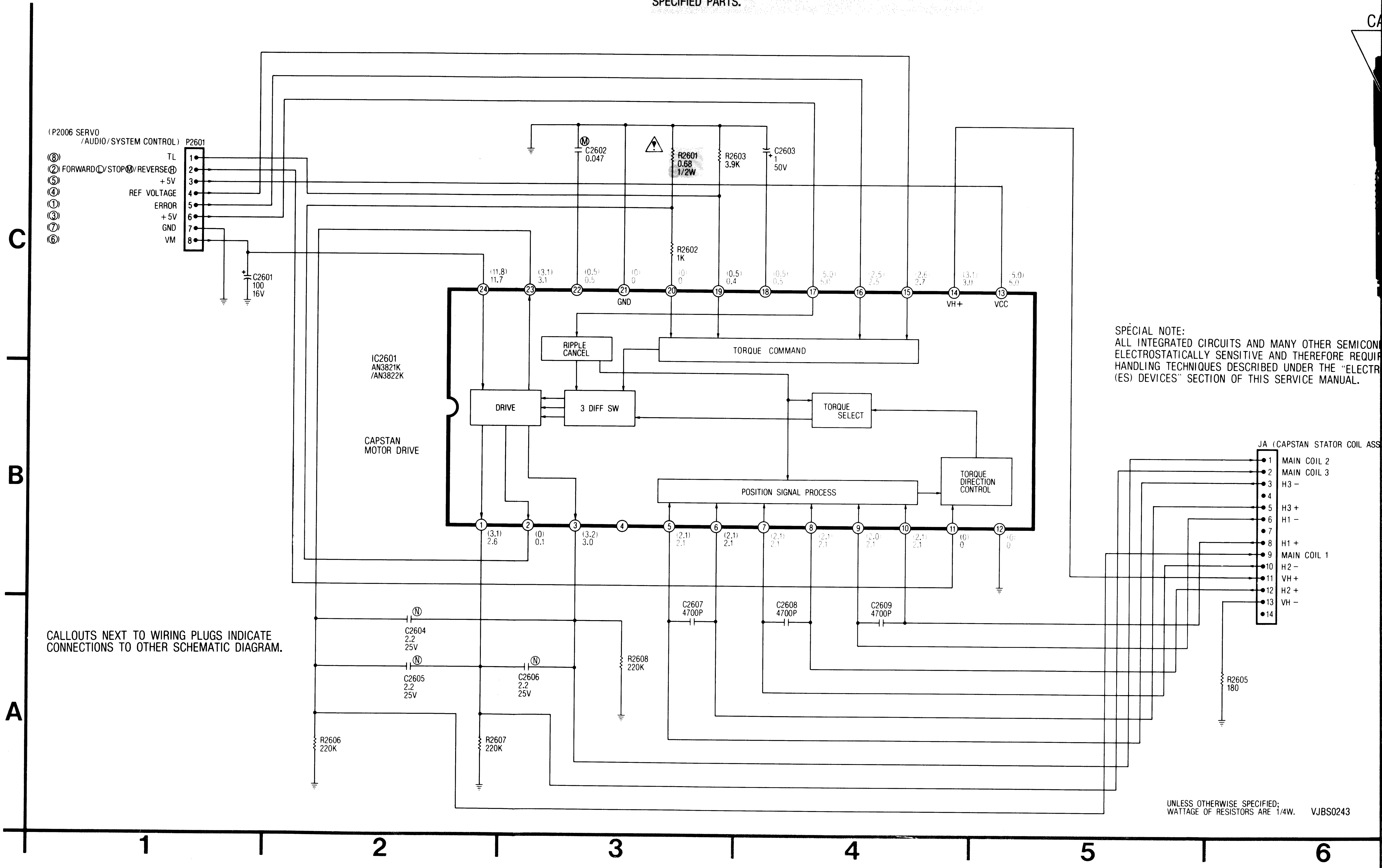
JC

1	CH 8
2	CH 3
3	CH 1
4	CH 2
5	TIMER SET
6	GND
7	CH UP
8	CH DOWN
9	CH LOCK Ⓛ
10	TV/VCR

CAPSTAN MOTOR DRIVE SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRAC


CA
(P2006 SERVO /AUDIO/SYSTEM CONTROL)
P2601
⑧ TL 1
② FORWARD Ⓛ/STOP Ⓜ/REVERSE Ⓗ 2
⑤ +5V 3
④ REF VOLTAGE 4
① ERROR 5
③ +5V 6
⑦ GND 7
⑥ VM 8
C2601 100 16V
Ⓜ C2602 0.047
⚠ R2601 0.68 1/2W
R2603 3.9K
C2603 1 50V
R2602 1K
(11.8) 11.7
(3.1) 3.1
(0.5) 0.5
(0) 0
(0) 0
(0.5) 0.4
(0.5) 0.5
(5.0) 5.0
(2.5) 2.5
(2.6) 2.7
(3.1) 3.0
(5.0) 5.0
24 23 22 21 20 19 18 17 16 15 14 13
GND
VH+
VCC
IC2601 AN3821K /AN3822K
CAPSTAN MOTOR DRIVE
RIPPLE CANCEL
TORQUE COMMAND
DRIVE
3 DIFF SW
TORQUE SELECT
TORQUE DIRECTION CONTROL
POSITION SIGNAL PROCESS
1 2 3 4 5 6 7 8 9 10 11 12
(3.1) 2.6
(0) 0.1
(3.2) 3.0
(2.1) 2.1
(2.1) 2.1
(2.1) 2.1
(2.1) 2.1
(2.0) 2.1
(2.1) 2.1
(0) 0
(0) 0
C2607 4700P
C2608 4700P
C2609 4700P
Ⓝ C2604 2.2 25V
Ⓝ C2605 2.2 25V
Ⓝ C2606 2.2 25V
R2608 220K
R2606 220K
R2607 220K
R2605 180
JA (CAPSTAN STATOR COIL ASS
1 MAIN COIL 2
2 MAIN COIL 3
3 H3 −
4
5 H3 +
6 H1 −
7
8 H1 +
9 MAIN COIL 1
10 H2 −
11 VH +
12 H2 +
13 VH −
14
C
B
A
1 2 3 4 5 6

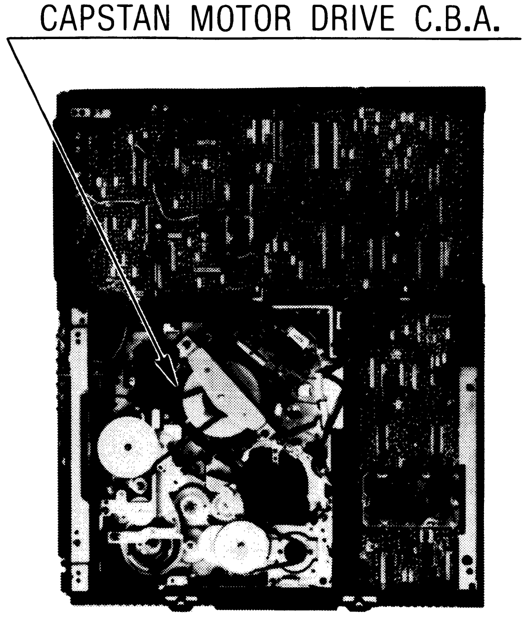
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICON
ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIR
HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTR
(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

CALLOUTS NEXT TO WIRING PLUGS INDICATE CONNECTIONS TO OTHER SCHEMATIC DIAGRAM.

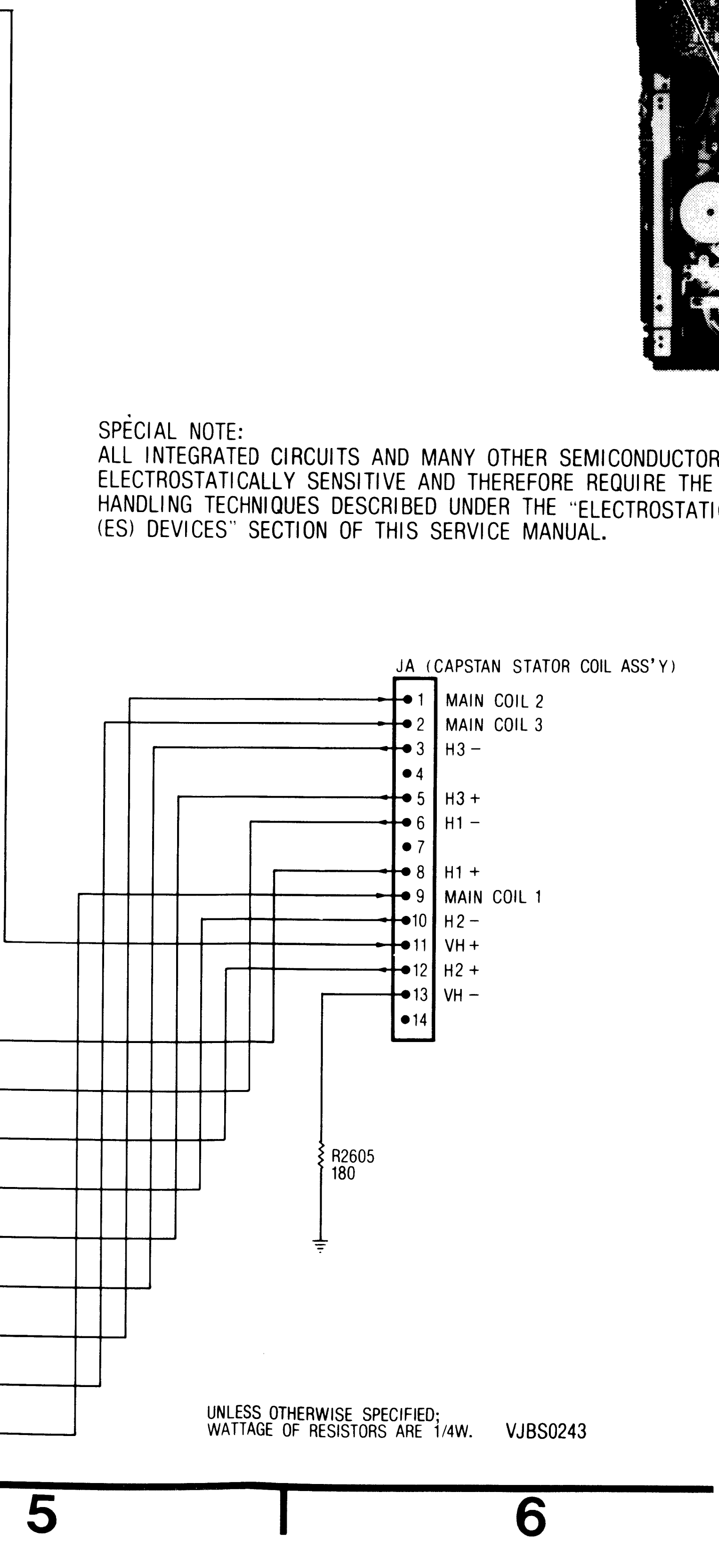
UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS ARE 1/4W.

VJBS0243

VOLTAGE MEASUREMENT:
COLOR BAR SIGNAL IN SP REC MODE WITH BRACKET.
COLOR BAR SIGNAL IN SP PLAY MODE WITHOUT BRACKET.


CAPSTAN MOTOR DRIVE C.B.A.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


JA (CAPSTAN STATOR COIL ASS'Y)
1 MAIN COIL 2
2 MAIN COIL 3
3 H3 −
4
5 H3 +
6 H1 −
7
8 H1 +
9 MAIN COIL 1
10 H2 −
11 VH +
12 H2 +
13 VH −
14
R2605
180
5
6

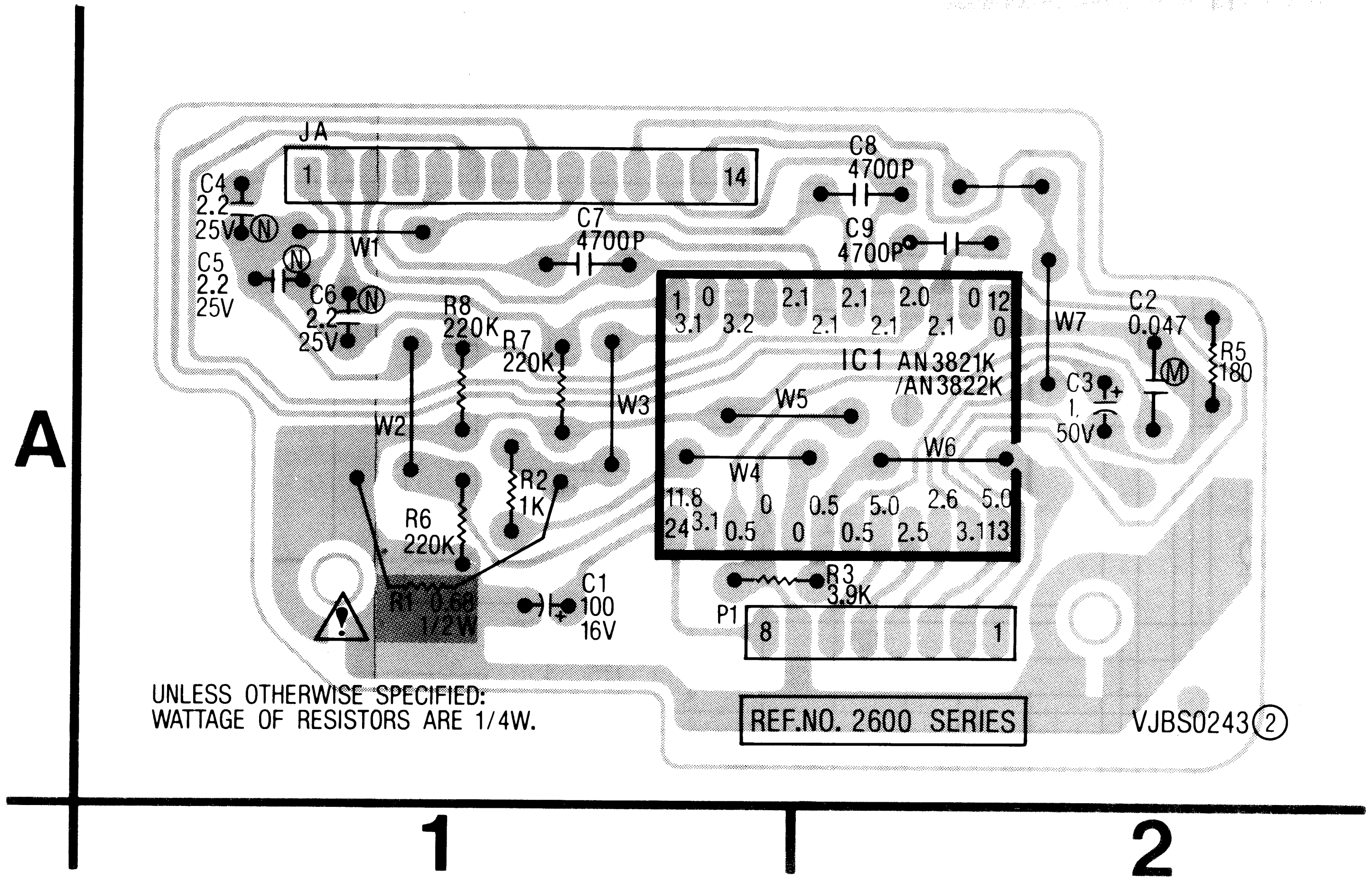
UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS ARE 1/4W. VJBS0243

VOLTAGE MEASUREMENT:
1. CUE, REVIEW, FRAME ADVANCE.
COLOR BAR SIGNAL IN SLP MODE.
2. OTHERS
COLOR BAR SIGNAL IN SP MODE.
★ : UNMEASURABLE OR UNNECESSARY TO MEASURE.

CAPSTAN MOTOR DRIVE C.B.A. VEPS0243C1

VOLTAGE MEASUREMENT: COLOR BAR SIGNAL IN SP REC MODE.

IMPORTANT SEFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.


A
1
2
JA
1
14
C4 2.2 25V Ⓝ
C5 2.2 25V Ⓝ
C6 2.2 25V Ⓝ
W1
W2
W3
W4
W5
W6
W7
C7 4700P
C8 4700P
C9 4700P
R8 220K
R7 220K
R6 220K
R2 1K
R1 0.68 1/2W
C1 100 16V
IC1 AN3821K /AN3822K
1 0 2.1 2.1 2.0 0 12
3.1 3.2 2.1 2.1 2.1 0
11.8 0 0.5 5.0 2.6 5.0
24 3.1 0.5 0 0.5 2.5 3.1 13
C2 0.047
C3 1. 50V
R5 180
R3 3.9K
P1
8
1
UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS ARE 1/4W.
REF.NO. 2600 SERIES
VJBS0243②

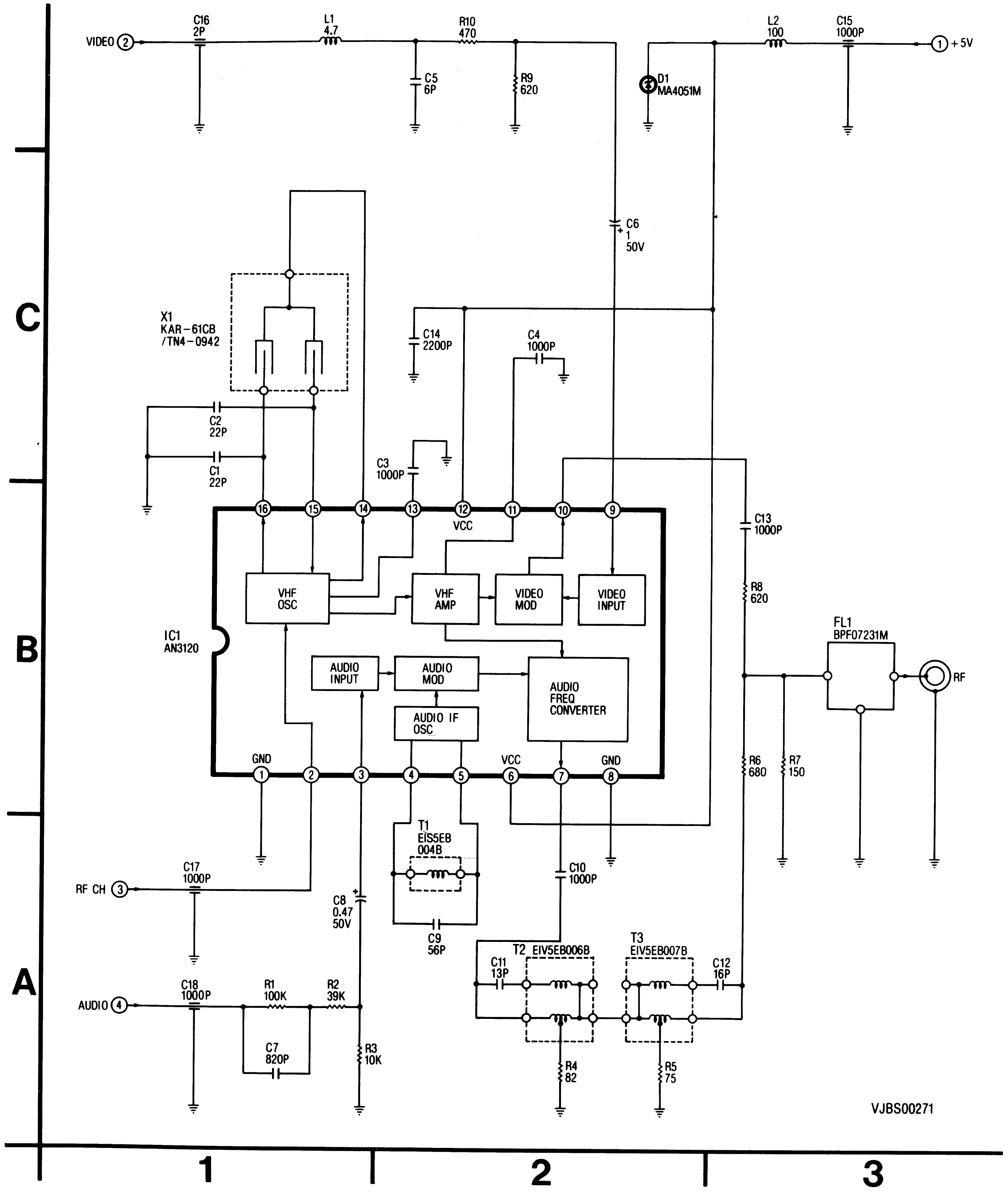
REF.NO. / MODE	IC2601 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	2.0	0	2.0	★	2.0	2.1	2.1	2.0	2.0	2.1	2.1	0	4.9	3.0	2.6	2.2	5.0	0.6	0.5	0
REC	3.1	0	3.2	★	2.1	2.1	2.1	2.1	2.0	2.1	0	0	5.0	3.1	2.6	2.5	5.0	0.5	0.5	0
PLAY	2.6	0.1	3.0	★	2.1	2.1	2.1	2.1	2.1	2.1	0	0	5.0	3.0	2.7	2.5	5.0	0.5	0.4	0
CUE	4.8	0.1	4.8	★	2.1	2.1	2.1	2.1	2.1	2.1	0	0	4.9	3.0	2.6	2.5	5.0	0.5	0.5	0.1
REV	4.7	0.1	4.8	★	2.1	2.1	2.1	2.1	2.1	2.1	4.7	0	5.0	3.0	2.6	2.4	5.0	0.5	0.4	0.1
F.ADV.	2.3	0	2.2	★	2.0	2.1	2.1	2.1	2.1	2.1	1.9	0	4.9	3.0	2.6	2.7	4.9	0.5	0.4	0
SLOW(1/4)	2.3	0	2.2	★	2.1	2.1	2.1	2.1	2.1	2.1	1.9	0	5.0	3.0	2.6	2.0	5.0	0.5	0.5	0

REF.NO. / MODE	IC2601 21	22	23	24
STOP	0	0	2.0	11.8
REC	0	0.5	3.1	11.8
PLAY	0	0.5	3.1	11.7
CUE	0	0.5	4.8	11.8
REV	0	0.5	4.9	11.7
F.ADV.	0	0.2	2.0	11.8
SLOW(1/4)	0	0.1	2.2	11.8

RF CONVERTER SCHEMATIC DIAGRAM

IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.

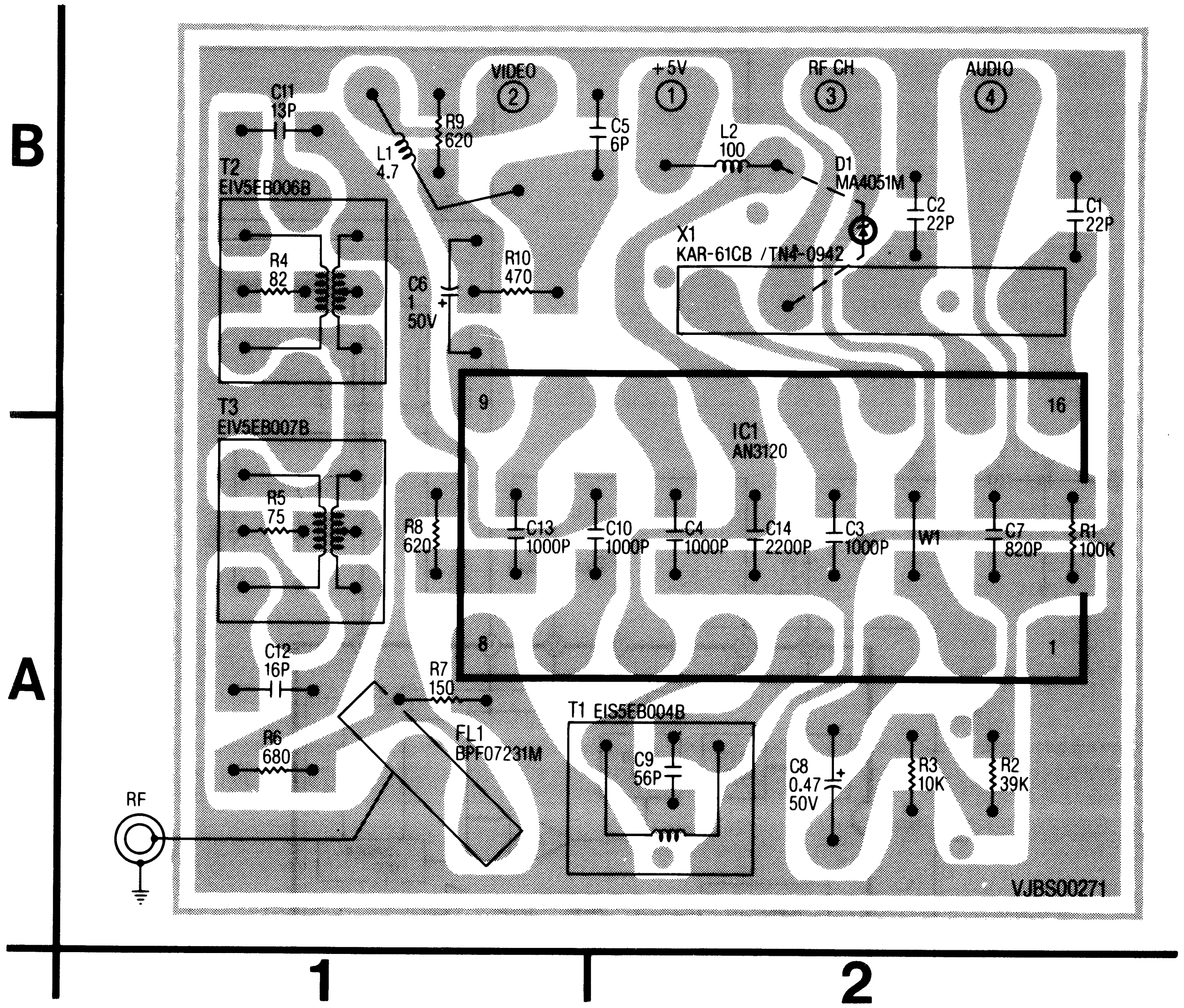
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.



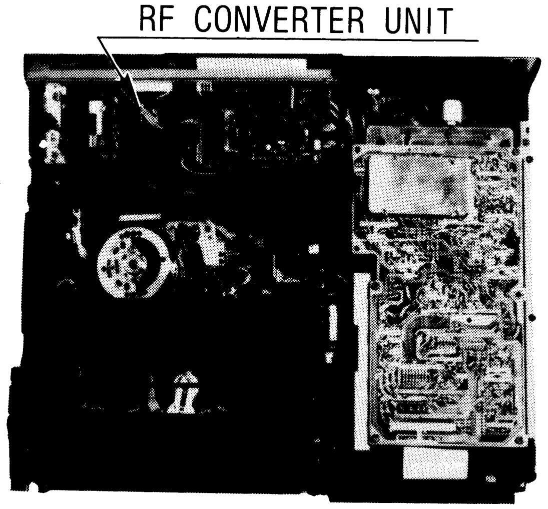
VIDEO ②
C16 2P
L1 4.7
R10 470
C5 6P
R9 620
D1 MA4051M
L2 100
C15 1000P
① +5V
C6 1 50V
X1 KAR-61CB /TN4-0942
C2 22P
C1 22P
C14 2200P
C4 1000P
C3 1000P
VCC
C13 1000P
IC1 AN3120
VHF OSC
VHF AMP
VIDEO MOD
VIDEO INPUT
AUDIO INPUT
AUDIO MOD
AUDIO IF OSC
AUDIO FREQ CONVERTER
R8 620
FL1 BPF07231M
RF
GND
VCC
GND
R6 680
R7 150
T1 EIS5EB 004B
C9 56P
C10 1000P
RF CH ③
C17 1000P
C8 0.47 50V
T2 EIV5EB006B
T3 EIV5EB007B
C11 13P
C12 16P
R4 82
R5 75
AUDIO ④
C18 1000P
R1 100K
R2 39K
C7 820P
R3 10K
VJBS00271
A
B
C
1
2
3

RF CONVERTER UNIT (VEQS0252)

IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.



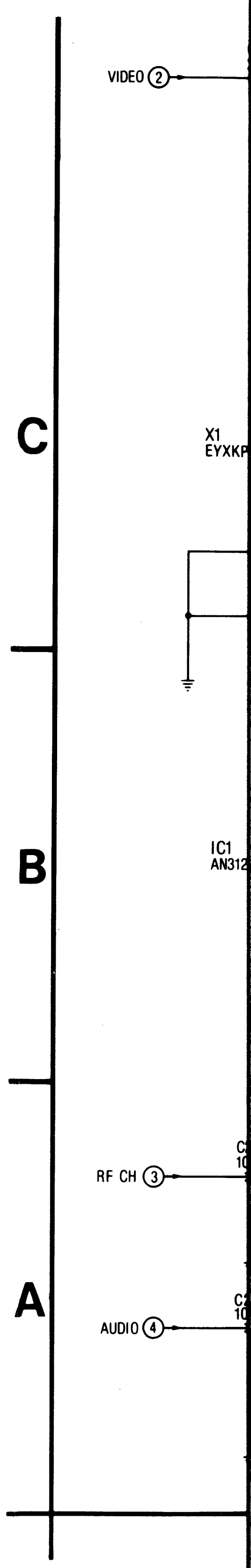
VIDEO ②
+5V ①
RF CH ③
AUDIO ④
C11 13P
R9 620
C5 6P
L1 4.7
L2 100
D1 MA4051M
C2 22P
C1 22P
T2 EIV5EB006B
R4 82
C6 1 50V
R10 470
X1 KAR-61CB /TN4-0942
T3 EIV5EB007B
R5 75
9
16
IC1 AN3120
R8 620
C13 1000P
C10 1000P
C4 1000P
C14 2200P
C3 1000P
W1
C7 820P
R1 100K
8
1
C12 16P
R7 150
T1 EIS5EB004B
R6 680
FL1 BPF07231M
C9 56P
C8 0.47 50V
R3 10K
R2 39K
RF
VJBS00271
A
B
1
2



RF CONVERTER UNIT

RF CONV

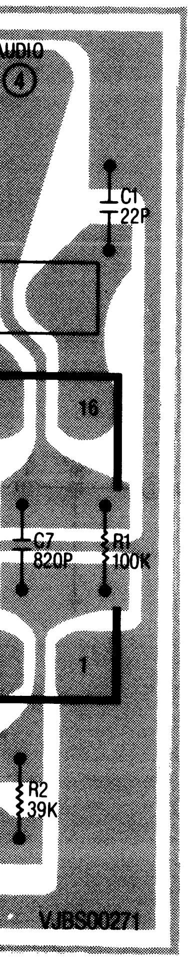
IMPORTAN
IF UNIT P
SPECIFICA
DURING S



VIDEO ②
C
X1 EYXKP
B
IC1 AN312
RF CH ③
A
AUDIO ④

LY, THE FCC

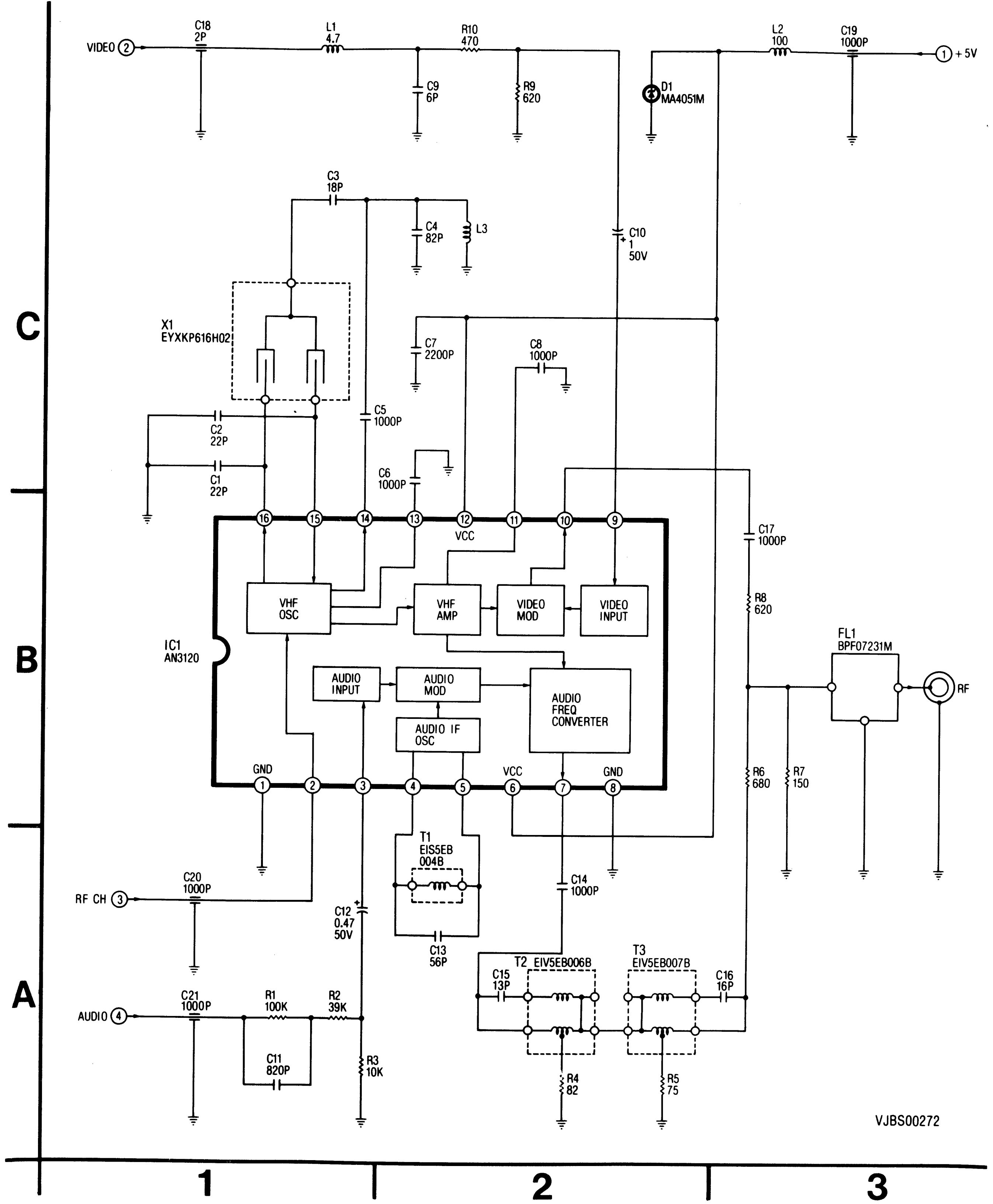
A UNIT.


UDIO
④
C1
22P
16
C7
820P
R1
100K
1
R2
39K
VJBS00271

RF CONVERTER SCHEMATIC DIAGRAM

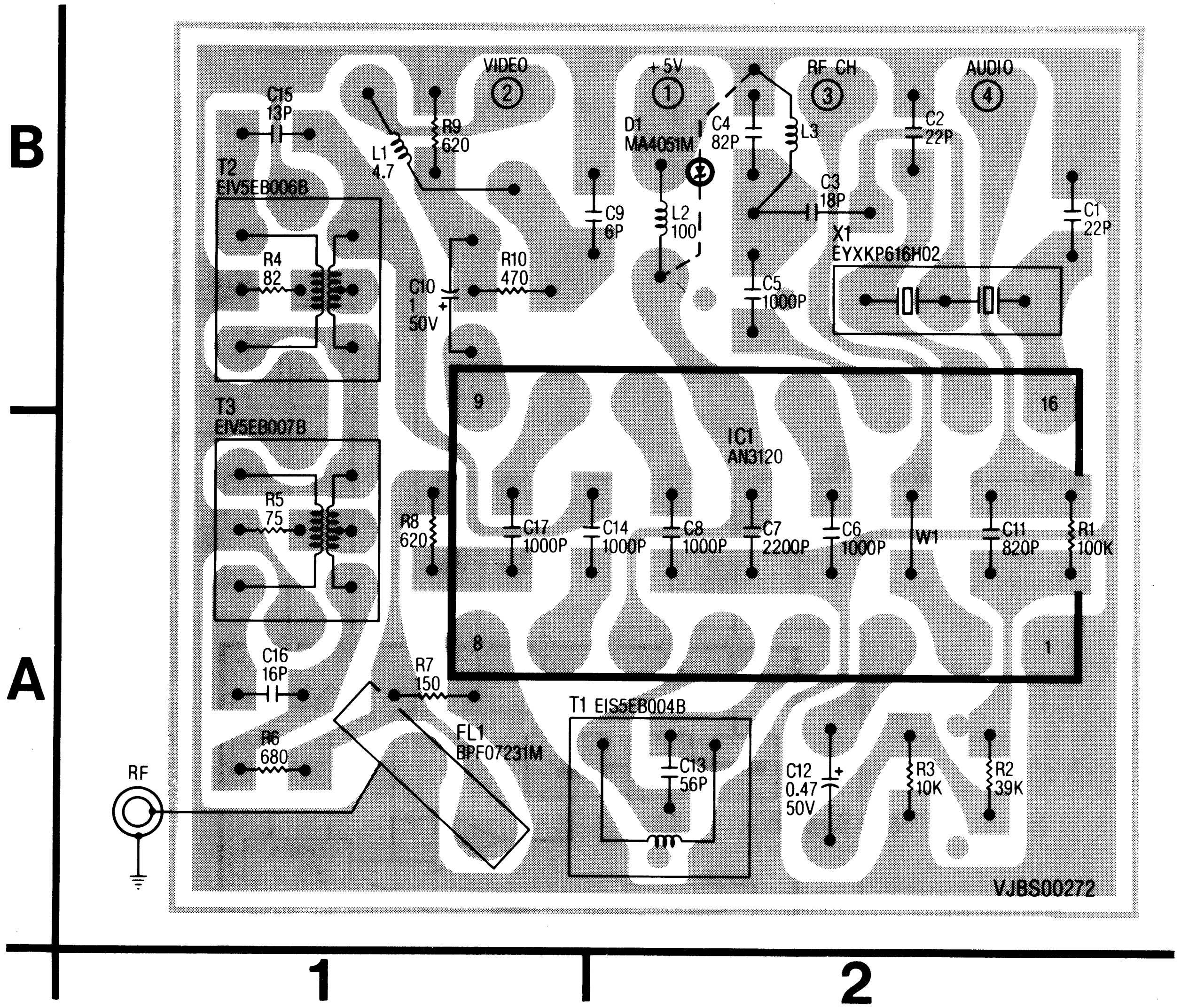
IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.

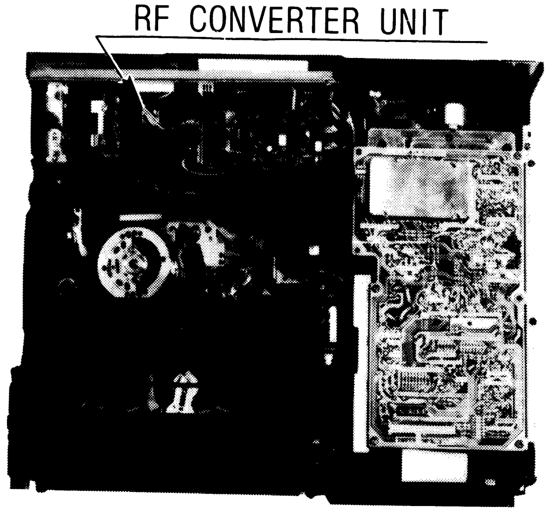
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


VIDEO ②
C18
2P
L1
4.7
R10
470
L2
100
C19
1000P
① +5V
C9
6P
R9
620
D1
MA4051M
C3
18P
C4
82P
L3
C10
1
50V
X1
EYXKP616H02
C7
2200P
C8
1000P
C5
1000P
C2
22P
C1
22P
C6
1000P
16
15
14
13
12
11
10
9
VCC
C17
1000P
VHF OSC
VHF AMP
VIDEO MOD
VIDEO INPUT
IC1
AN3120
AUDIO INPUT
AUDIO MOD
AUDIO IF OSC
AUDIO FREQ CONVERTER
R8
620
FL1
BPF07231M
RF
GND
1
2
3
4
5
6
7
8
VCC
GND
R6
680
R7
150
T1
EIS5EB
004B
C14
1000P
RF CH ③
C20
1000P
C12
0.47
50V
C13
56P
T2 EIV5EB006B
T3
EIV5EB007B
C15
13P
C16
16P
AUDIO ④
C21
1000P
R1
100K
R2
39K
C11
820P
R3
10K
R4
82
R5
75
VJBS00272
C
B
A
1
2
3

RF CONVERTER UNIT (VEQS0253)

IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.

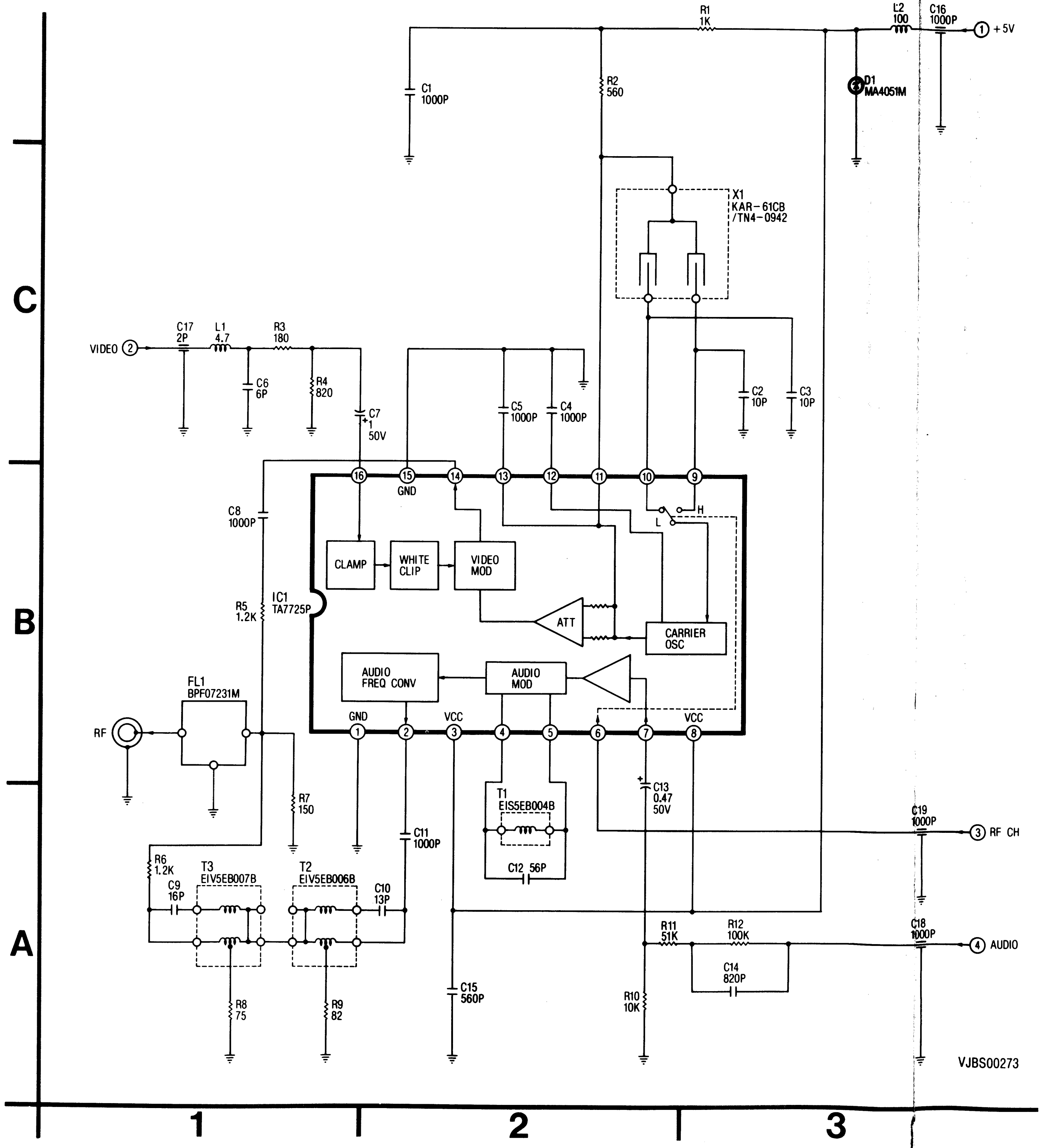

B
A
VIDEO
②
+5V
①
RF CH
③
AUDIO
④
C15
13P
R9
620
L1
4.7
T2
EIV5EB006B
R4
82
D1
MA4051M
C4
82P
L3
C2
22P
C3
18P
C1
22P
C9
6P
L2
100
X1
EYXKP616H02
C10
1
50V
R10
470
C5
1000P
9
16
IC1
AN3120
T3
EIV5EB007B
R5
75
R8
620
C17
1000P
C14
1000P
C8
1000P
C7
2200P
C6
1000P
W1
C11
820P
R1
100K
8
1
C16
16P
R7
150
T1 EIS5EB004B
FL1
BPF07231M
R6
680
C13
56P
RF
C12
0.47
50V
R3
10K
R2
39K
VJBS00272
1
2


RF CONVERTER UNIT

RF CONVERTER SCHEMATIC DIAGRAM

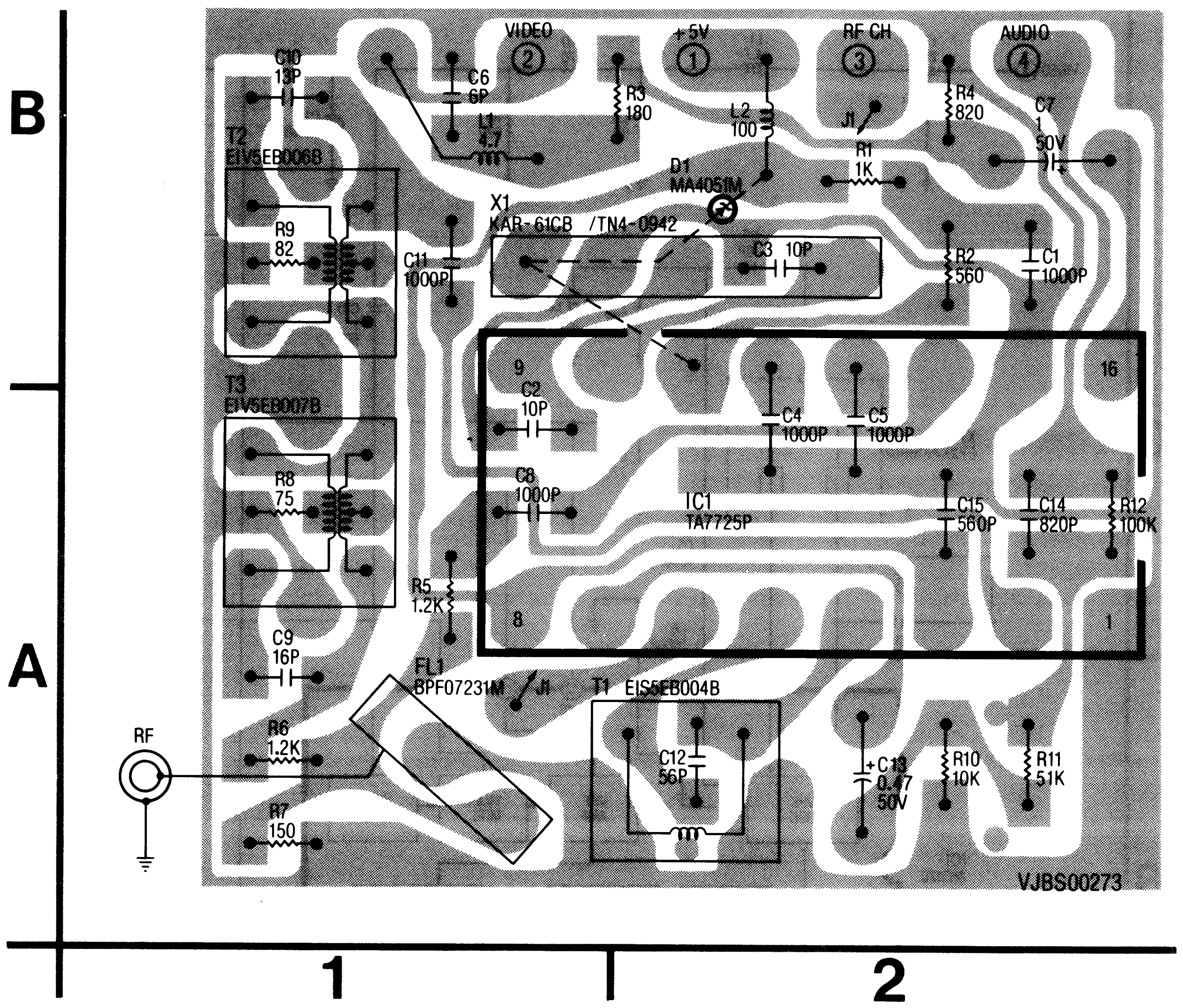
IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.

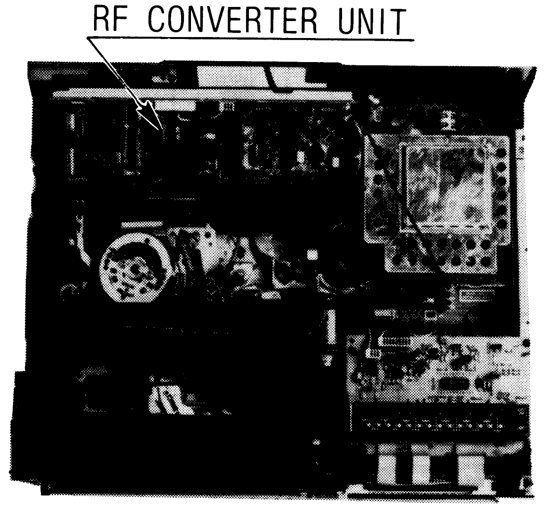
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


R1
1K
L2
100
C16
1000P
① +5V
C1
1000P
R2
560
D1
MA4051M
X1
KAR-61CB
/TN4-0942
C17
2P
L1
4.7
R3
180
VIDEO ②
C6
6P
R4
820
C7
1
50V
C5
1000P
C4
1000P
C2
10P
C3
10P
C8
1000P
16
15
GND
14
13
12
11
10
9
H
L
CLAMP
WHITE
CLIP
VIDEO
MOD
ATT
CARRIER
OSC
R5
1.2K
IC1
TA7725P
AUDIO
FREQ CONV
AUDIO
MOD
FL1
BPF07231M
RF
GND
1
2
VCC
3
4
5
6
7
VCC
8
T1
EIS5EB004B
C12 56P
C13
0.47
50V
R7
150
C11
1000P
C19
1000P
③ RF CH
R6
1.2K
C9
16P
T3
EIV5EB007B
T2
EIV5EB006B
C10
13P
R11
51K
R12
100K
C18
1000P
④ AUDIO
C14
820P
C15
560P
R8
75
R9
82
R10
10K
VJBS00273
A
B
C
1
2
3

RF CONVERTER UNIT (VEQS0254)

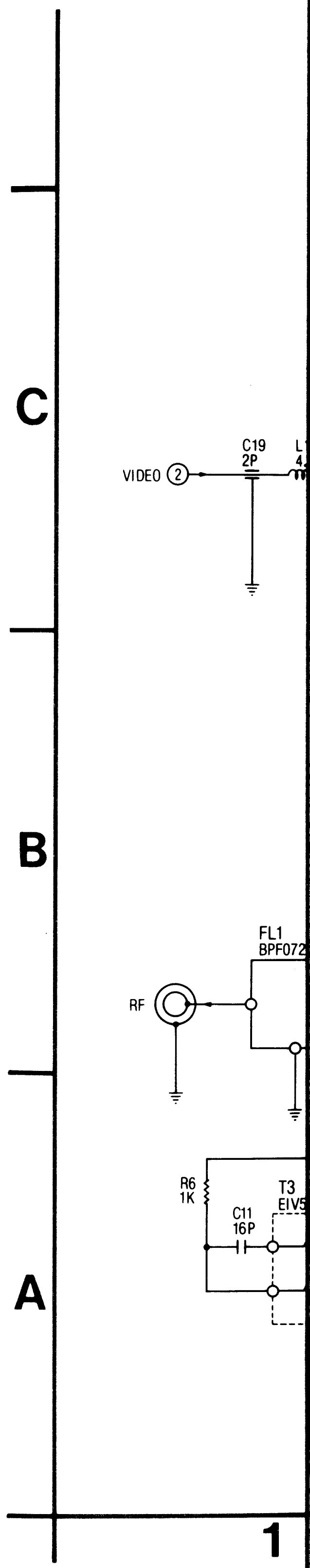
IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.


VIDEO
②
+5V
①
RF CH
③
AUDIO
④
C10
13P
C6
6P
R3
180
L1
4.7
L2
100
J1
R4
820
C7
1
50V
T2
EIV5EB006B
D1
MA4051M
R1
1K
R9
82
X1
KAR-61CB /TN4-0942
C11
1000P
C3 10P
R2
560
C1
1000P
9
16
C2
10P
C4
1000P
C5
1000P
T3
EIV5EB007B
R8
75
C8
1000P
IC1
TA7725P
C15
560P
C14
820P
R12
100K
R5
1.2K
8
1
C9
16P
FL1
BPF07231M
J1
T1 EIS5EB004B
RF
R6
1.2K
C12
56P
C13
0.47
50V
R10
10K
R11
51K
R7
150
VJBS00273
A
B
1
2

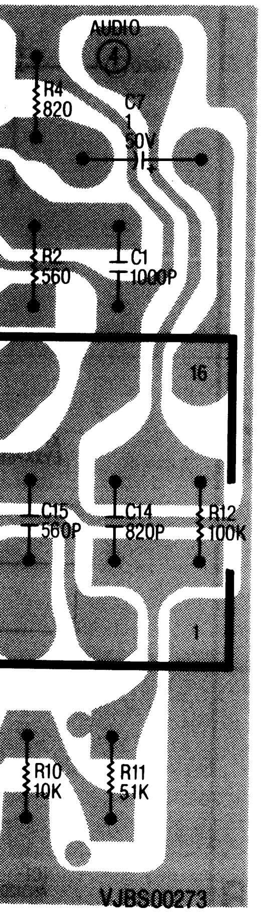

RF CONVERTER UNIT

RF CONVER

IMPORTANT N
IF UNIT PART
SPECIFICATIO
DURING SERV


VIDEO ②
C19
2P
FL1
BPF072
RF
R6
1K
C11
16P
T3
EIV5
A
B
C
1

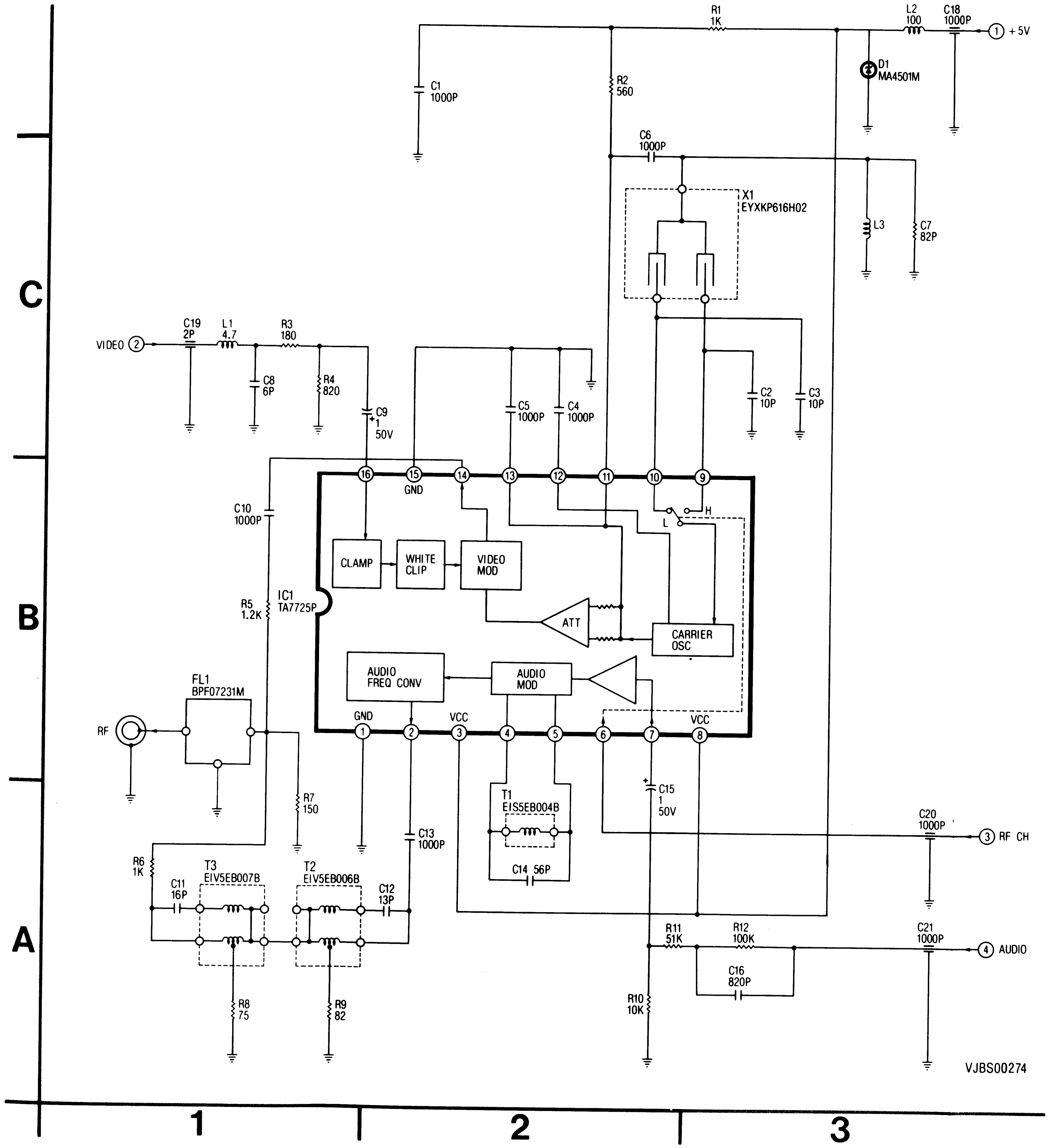
NDIVIDUALLY, THE FCC
ATISFIED.
ACE AS A UNIT.


AUDIO ④
R4 820
C7 1 50V
R2 560
C1 1000P
16
C15 560P
C14 820P
R12 100K
1
R10 10K
R11 51K
VJBS00273

RF CONVERTER SCHEMATIC DIAGRAM

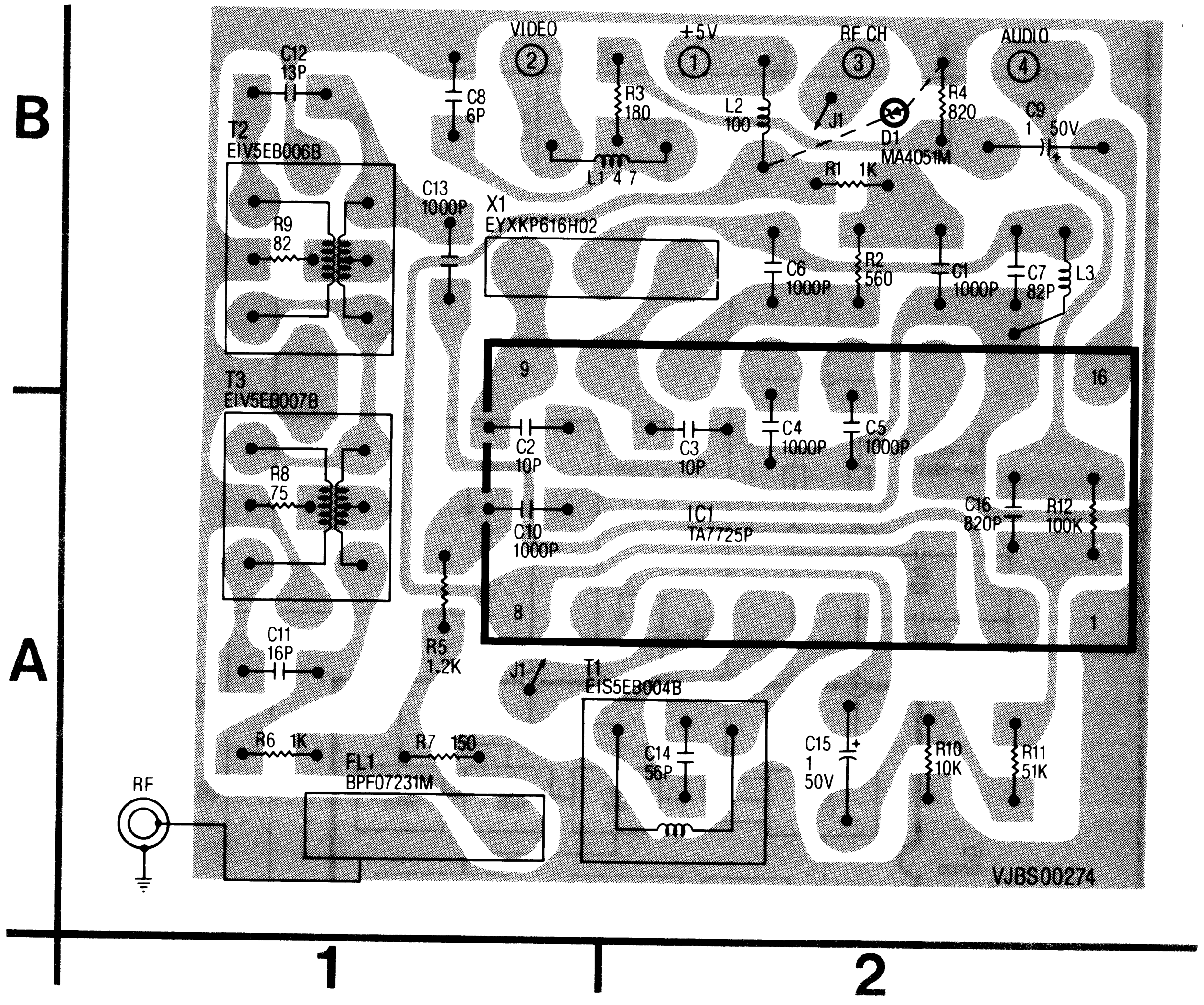
IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

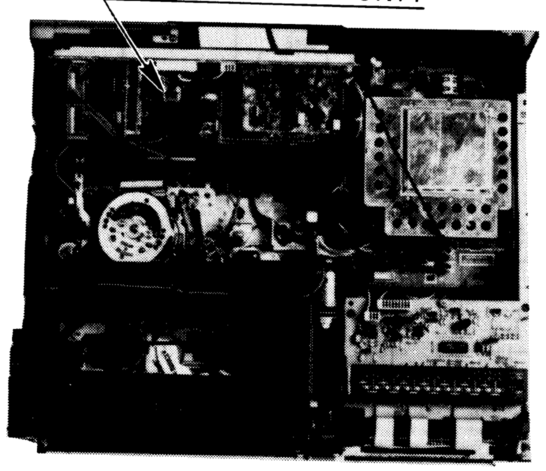

C
B
A
1
2
3
R1 1K
L2 100
C18 1000P
① +5V
C1 1000P
R2 560
D1 MA4501M
C6 1000P
X1 EYXKP616H02
L3
C7 82P
VIDEO ②
C19 2P
L1 4.7
R3 180
C8 6P
R4 820
C9 1 50V
C5 1000P
C4 1000P
C2 10P
C3 10P
C10 1000P
R5 1.2K
IC1 TA7725P
GND
CLAMP
WHITE CLIP
VIDEO MOD
ATT
CARRIER OSC
L
H
AUDIO FREQ CONV
AUDIO MOD
GND
VCC
VCC
FL1 BPF07231M
RF
R7 150
R6 1K
C13 1000P
T1 EIS5EB004B
C14 56P
C15 1 50V
C20 1000P
③ RF CH
C11 16P
T3 EIV5EB007B
T2 EIV5EB006B
C12 13P
R8 75
R9 82
R11 51K
R12 100K
C16 820P
C21 1000P
④ AUDIO
R10 10K
VJBS00274

RF CONVERTER UNIT (VEQS0255)

IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.

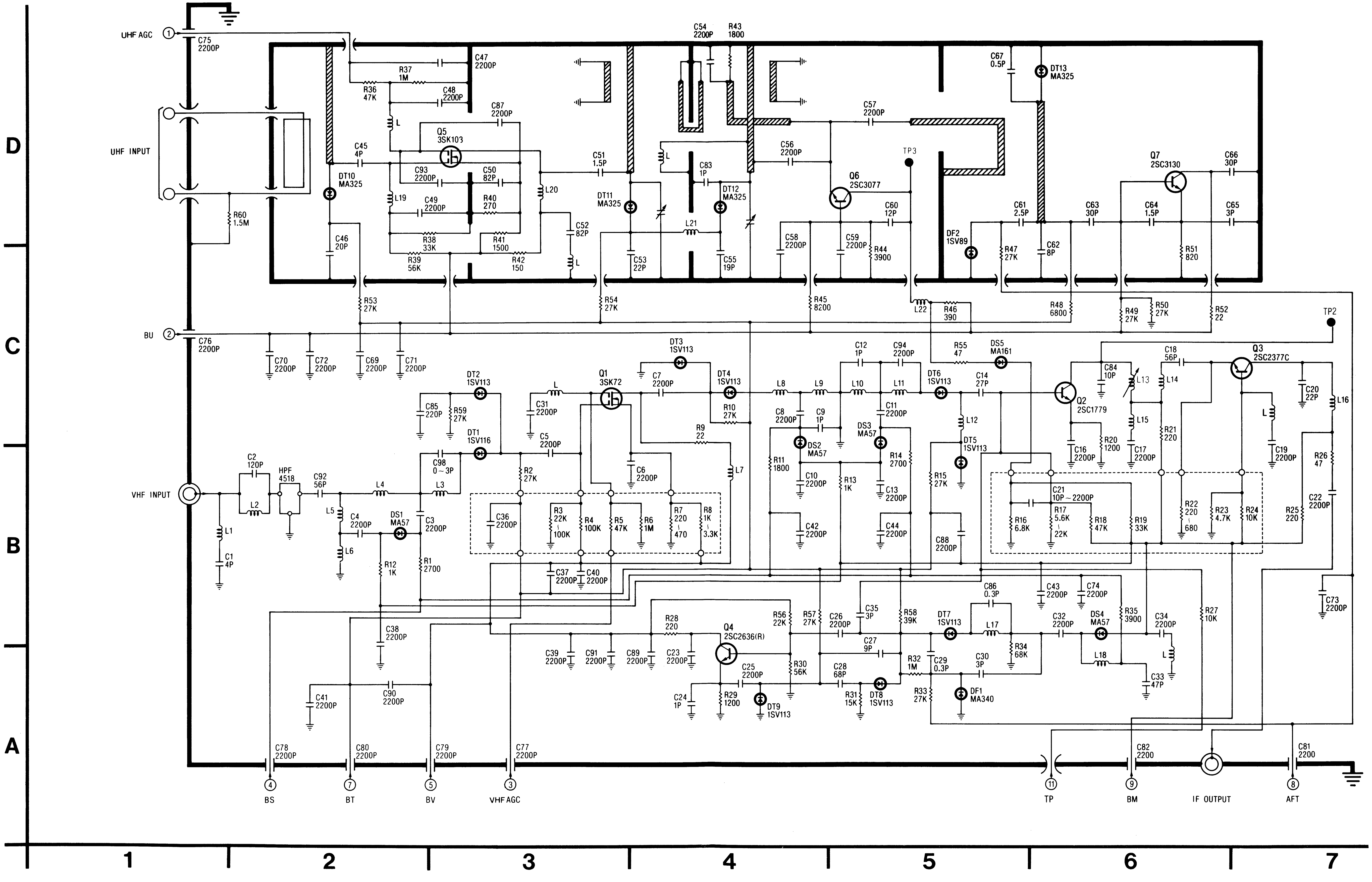

B
A
1
2
VIDEO ②
+5V ①
RF CH ③
AUDIO ④
C12 13P
C8 6P
R3 180
L2 100
J1
D1 MA4051M
R4 820
C9 1 50V
T2 EIV5EB006B
L1 4.7
R1 1K
R9 82
C13 1000P
X1 EYXKP616H02
C6 1000P
R2 560
C1 1000P
C7 82P
L3
9
16
T3 EIV5EB007B
C2 10P
C3 10P
C4 1000P
C5 1000P
R8 75
C10 1000P
IC1 TA7725P
C16 820P
R12 100K
8
1
C11 16P
R5 1.2K
J1
T1 EIS5EB004B
C14 56P
C15 1 50V
R10 10K
R11 51K
R6 1K
R7 150
FL1 BPF07231M
RF
VJBS00274

RF CONVERTER UNIT



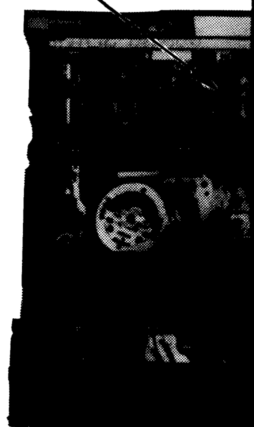
UHF/VHF TUNER SCHEMATIC DIAGRAM TNV56751F2R

IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.



D
C
B
A
1
2
3
4
5
6
7
UHF AGC ①
C75 2200P
C47 2200P
R37 1M
R36 47K
C48 2200P
C87 2200P
Q5 3SK103
C45 4P
DT10 MA325
C93 2200P
C50 82P
L19
C49 2200P
R40 270
R38 33K
R41 1500
R39 56K
R42 150
L20
C52 82P
C46 20P
R60 1.5M
UHF INPUT
C51 1.5P
DT11 MA325
C53 22P
C54 2200P
R43 1800
C83 1P
DT12 MA325
L21
C55 19P
C56 2200P
C57 2200P
Q6 2SC3077
TP3
C58 2200P
C59 2200P
R44 3900
C60 12P
C67 0.5P
DT13 MA325
C61 2.5P
C62 8P
DF2 1SV89
R47 27K
C63 30P
Q7 2SC3130
C64 1.5P
R51 820
C66 30P
C65 3P
R53 27K
R54 27K
R45 8200
L22
R46 390
R48 6800
R49 27K
R50 27K
R52 22
TP2
BU ②
C76 2200P
C70 2200P
C72 2200P
C69 2200P
C71 2200P
DT3 1SV113
DT2 1SV113
C85 220P
R59 27K
C31 2200P
Q1 3SK72
C7 2200P
DT4 1SV113
R10 27K
R9 22
L7
DT1 1SV116
C5 2200P
C6 2200P
C98 0~3P
L3
L4
C92 56P
HPF 4518
C2 120P
L2
VHF INPUT
L1
C1 4P
L5
C4 2200P
DS1 MA57
C3 2200P
L6
R12 1K
R1 2700
R2 27K
C36 2200P
R3 22K \ 100K
R4 100K
R5 47K
R6 1M
R7 220 \ 470
R8 1K \ 3.3K
C37 2200P
C40 2200P
L8
C8 2200P
C9 1P
L9
L10
C12 1P
L11
C94 2200P
C11 2200P
DS2 MA57
DS3 MA57
R11 1800
C10 2200P
R13 1K
R14 2700
C13 2200P
C42 2200P
C44 2200P
R55 47
DS5 MA161
DT6 1SV113
C14 27P
L12
DT5 1SV113
R15 27K
C88 2200P
C84 10P
Q2 2SC1779
L13
L14
L15
C18 56P
Q3 2SC2377C
C20 22P
L16
C16 2200P
R20 1200
C17 2200P
R21 220
C19 2200P
R26 47
C21 10P~2200P
R16 6.8K
R17 5.6K \ 22K
R18 47K
R19 33K
R22 220 \ 680
R23 4.7K
R24 10K
R25 220
C22 2200P
C38 2200P
C39 2200P
C91 2200P
C89 2200P
C23 2200P
R28 220
Q4 2SC2636(R)
R56 22K
R57 27K
C26 2200P
C35 3P
R58 39K
C27 9P
C86 0.3P
DT7 1SV113
L17
C43 2200P
C74 2200P
R35 3900
C32 2200P
DS4 MA57
C34 2200P
R27 10K
C73 2200P
R30 56K
C25 2200P
C28 68P
R32 1M
C29 0.3P
C30 3P
R34 68K
L18
C33 47P
C24 1P
R29 1200
DT9 1SV113
R31 15K
DT8 1SV113
R33 27K
DF1 MA340
C41 2200P
C90 2200P
C78 2200P
C80 2200P
C79 2200P
C77 2200P
C82 2200
C81 2200
④ BS
⑦ BT
⑤ BV
③ VHF AGC
⑪ TP
⑨ BM
IF OUTPUT
⑧ AFT

UHF/VHF



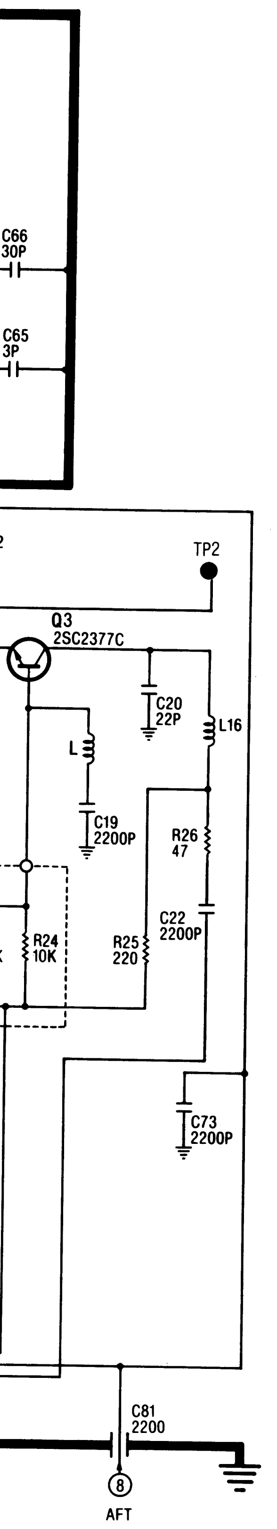
UHF SCHE
Q1
Q2
Q3
Q4
Q5
Q6
Q7

UHF
Q1
Q2
Q3
Q4
Q5
Q6
Q7

SPECIAL NOTE:
ALL INTEGRATED
ELECTROSTATICAL
HANDLING TECHN
(ES) DEVICES" SE

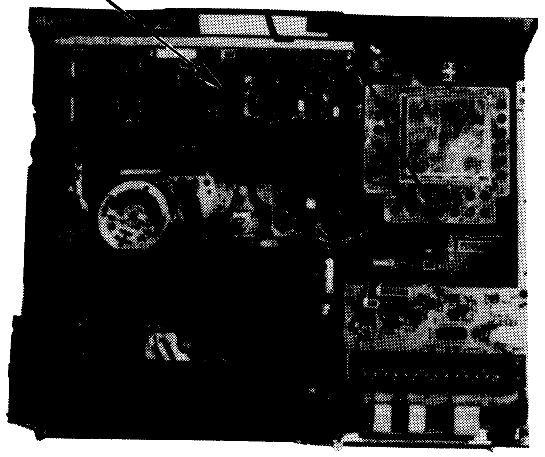
Y, THE FCC

UNIT.


C66
30P
C65
3P
TP2
Q3
2SC2377C
C20
22P
L16
L
C19
2200P
R26
47
C22
2200P
R24
10K
R25
220
C73
2200P
C81
2200
8
AFT

UHF/VHF TUNER UNIT TNV56751F2R

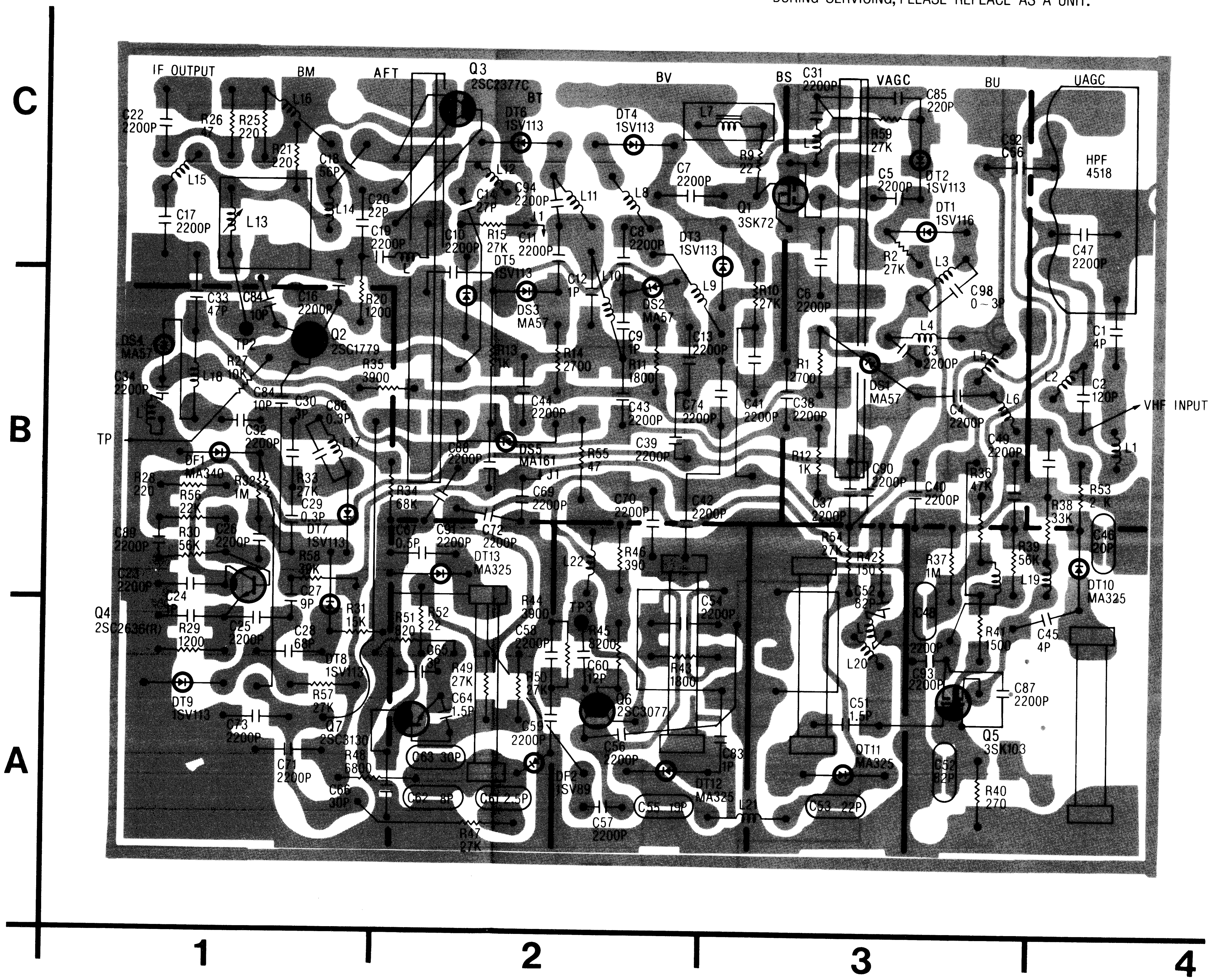
UHF/VHF TUNER UNIT



IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.

UHF/VHF TUNER SCHEMATIC DIAGRAM	
Q1	3-C
Q2	6-C
Q3	7-C
Q4	4-A
Q5	3-D
Q6	5-D
Q7	6-D

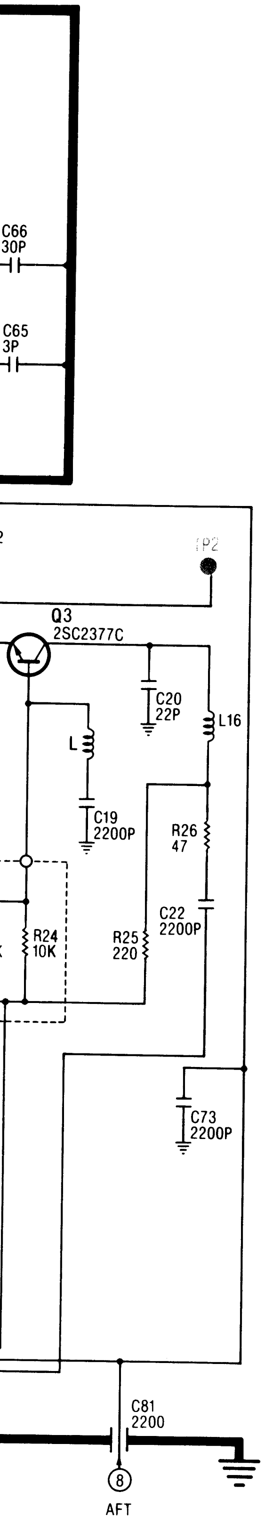
UHF/VHF TUNER UNIT	
Q1	3-C
Q2	1-B
Q3	2-C
Q4	1-B
Q5	3-A
Q6	2-A
Q7	2-A


C
B
A
1
2
3
4
IF OUTPUT
BM
AFT
Q3
2SC2377C
BT
BV
BS
VAGC
BU
UAGC
C22
2200P
R26
47
R25
220
L16
R21
220
C18
56P
L15
C17
2200P
L13
L14
C20
22P
C19
2200P
DT6
1SV113
C94
2200P
L12
C15
27P
L11
C10
2200P
R15
27K
C11
2200P
DT5
1SV113
DT4
1SV113
L8
C7
2200P
L7
R9
22
Q1
3SK72
C31
2200P
R59
27K
C5
2200P
DT2
1SV113
DT1
1SV116
C85
220P
C92
C96
HPF
4518
C47
2200P
C8
2200P
DT3
1SV113
L9
L10
C12
1P
DS3
MA57
DS2
MA57
C9
1P
R10
27K
C6
2200P
R2
27K
L3
C98
0~3P
L4
C3
2200P
L5
C1
4P
C2
120P
L2
L6
VHF INPUT
L1
C33
47P
C84
10P
C16
2200P
R20
1200
Q2
2SC1779
TP2
DS4
MA57
R27
10K
R35
3900
R13
1K
R14
2700
R11
1800
C13
2200P
R1
2700
DS1
MA57
C4
2200P
C34
2200P
L18
L17
C84
10P
C30
C86
0.3P
C44
2200P
C43
2200P
C74
2200P
C41
2200P
C38
2200P
C49
2200P
TP
C32
2200P
DF1
MA340
DS5
MA161
J1
R55
47
C39
2200P
R12
1K
C90
2200P
C40
2200P
R36
47K
R53
2.2K
R28
220
R56
22K
R32
1M
R33
27K
C29
0.3P
R34
68K
C88
2200P
C69
2200P
C70
2200P
C42
2200P
C87
2200P
R38
33K
C89
2200P
R30
56K
C26
2200P
DT7
1SV113
C67
0.5P
C91
2200P
C72
2200P
DT13
MA325
L22
R46
390
R54
27K
R42
150
R37
1M
R39
56K
L19
C46
20P
DT10
MA325
C24
2200P
C24
Q4
2SC2636(R)
R58
39K
C27
9P
R31
15K
R51
220
R52
22
R44
3900
TP3
R45
8200
C54
2200P
C52
82P
C48
C45
4P
R29
1200
C25
2200P
C28
68P
C58
2200P
R43
1800
L20
R41
1500
DT8
1SV113
C63
33P
R49
27K
R50
27K
C60
18P
Q6
2SC3077
C93
2200P
C87
2200P
DT9
1SV113
R57
27K
C64
1.5P
C51
1.5P
C73
2200P
Q7
2SC3130
C59
2200P
C56
2200P
DT11
MA325
Q5
3SK103
C71
2200P
R48
6800
C63 30P
DF2
1SV89
DT12
MA325
C83
1P
C52
82P
R40
270
C65
30P
C62 8P
C61 2.5P
C57
2200P
C55 15P
L21
C53 22P
R47
27K

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

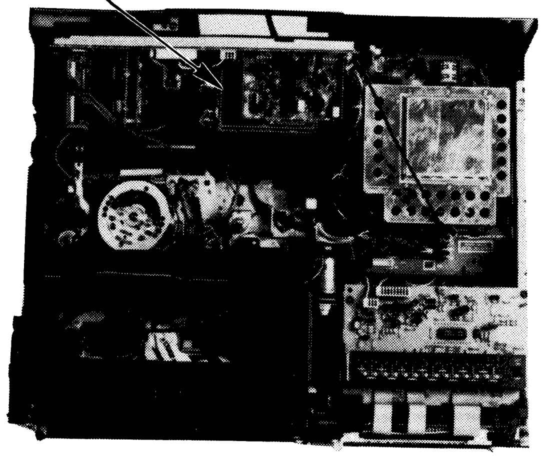
Y, THE FCC

JNIT.

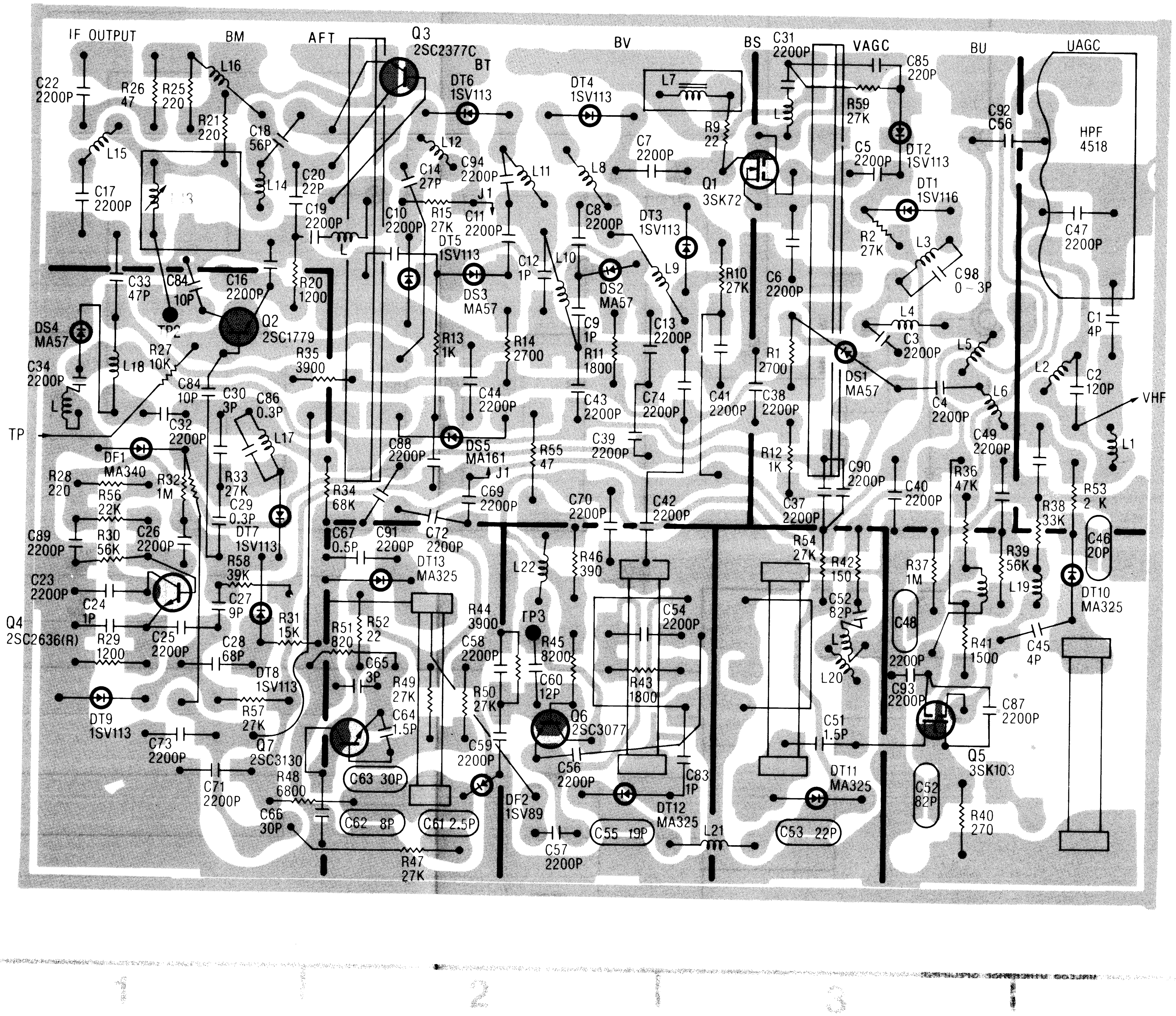

C66
30P
C65
3P
TP2
Q3
2SC2377C
C20
22P
L16
L
C19
2200P
R26
47
R24
10K
R25
220
C22
2200P
C73
2200P
C81
2200
8
AFT

UHF/VHF TUNER UNIT TNV56751F2R

UHF/VHF TUNER UNIT



IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.


IF OUTPUT
BM
AFT
Q3
2SC2377C
BT
BV
BS
C31
2200P
VAGC
BU
UAGC
C22
2200P
R26
47
R25
220
L16
R21
220
C18
56P
DT6
1SV113
DT4
1SV113
L7
R9
22
C85
220P
R59
27K
C92
C56
HPF
4518
L15
L12
C14
27P
C94
2200P
L11
L8
C7
2200P
Q1
3SK72
C5
2200P
DT2
1SV113
C17
2200P
L13
L14
C20
22P
C19
2200P
J1
C10
2200P
R15
27K
C11
2200P
C8
2200P
DT3
1SV113
DT1
1SV116
C47
2200P
DT5
1SV113
C12
1P
L10
R2
27K
L3
C33
47P
C84
10P
C16
2200P
R20
1200
DS3
MA57
DS2
MA57
L9
R10
27K
C6
2200P
C98
0 ~ 3P
TP2
DS4
MA57
Q2
2SC1779
R13
1K
R14
2700
C9
1P
C13
2200P
L4
C1
4P
R27
10K
R35
3900
R11
1800
R1
2700
C3
2200P
L5
C34
2200P
L18
C84
10P
C30
3P
C86
0.3P
C44
2200P
C43
2200P
C74
2200P
C41
2200P
C38
2200P
DS1
MA57
C4
2200P
L2
C2
120P
L6
VHF INPUT
L
C32
2200P
L17
C49
2200P
TP
DF1
MA340
C88
2200P
DS5
MA161
R55
47
C39
2200P
R12
1K
C90
2200P
C40
2200P
R36
47K
L1
R28
220
R56
22K
R32
1M
R33
27K
J1
C69
2200P
C70
2200P
C42
2200P
C37
2200P
R53
2 K
R34
68K
C29
0.3P
R38
33K
C89
2200P
R30
56K
C26
2200P
DT7
1SV113
C67
0.5P
C91
2200P
C72
2200P
R46
390
R54
27K
R42
150
R37
1M
R39
56K
C46
20P
C23
2200P
R58
39K
DT13
MA325
L22
L19
C27
9P
C52
82P
DT10
MA325
Q4
2SC2636(R)
C24
1P
R31
15K
R51
820
R52
22
R44
3900
TP3
C54
2200P
C48
R29
1200
C25
2200P
C28
68P
R45
8200
C58
2200P
L
C45
4P
R41
1500
C65
3P
R49
27K
R50
27K
C60
12P
R43
1800
L20
2200P
DT8
1SV113
C93
2200P
C87
2200P
DT9
1SV113
R57
27K
C64
1.5P
Q6
2SC3077
C51
1.5P
C73
2200P
Q7
2SC3130
C59
2200P
C56
2200P
C83
1P
Q5
3SK103
C63 30P
DT11
MA325
C71
2200P
R48
6800
DF2
1SV89
DT12
MA325
C52
82P
C66
30P
C62 8P
C61 2.5P
C55 19P
L21
C53 22P
R40
270
R47
27K
C57
2200P
1
2
3
4

UHF/VHF TUNER SCHEMATIC DIAGRAM	
Q1	3-C
Q2	6-C
Q3	7-C
Q4	4-A
Q5	3-D
Q6	5-D
Q7	6-D

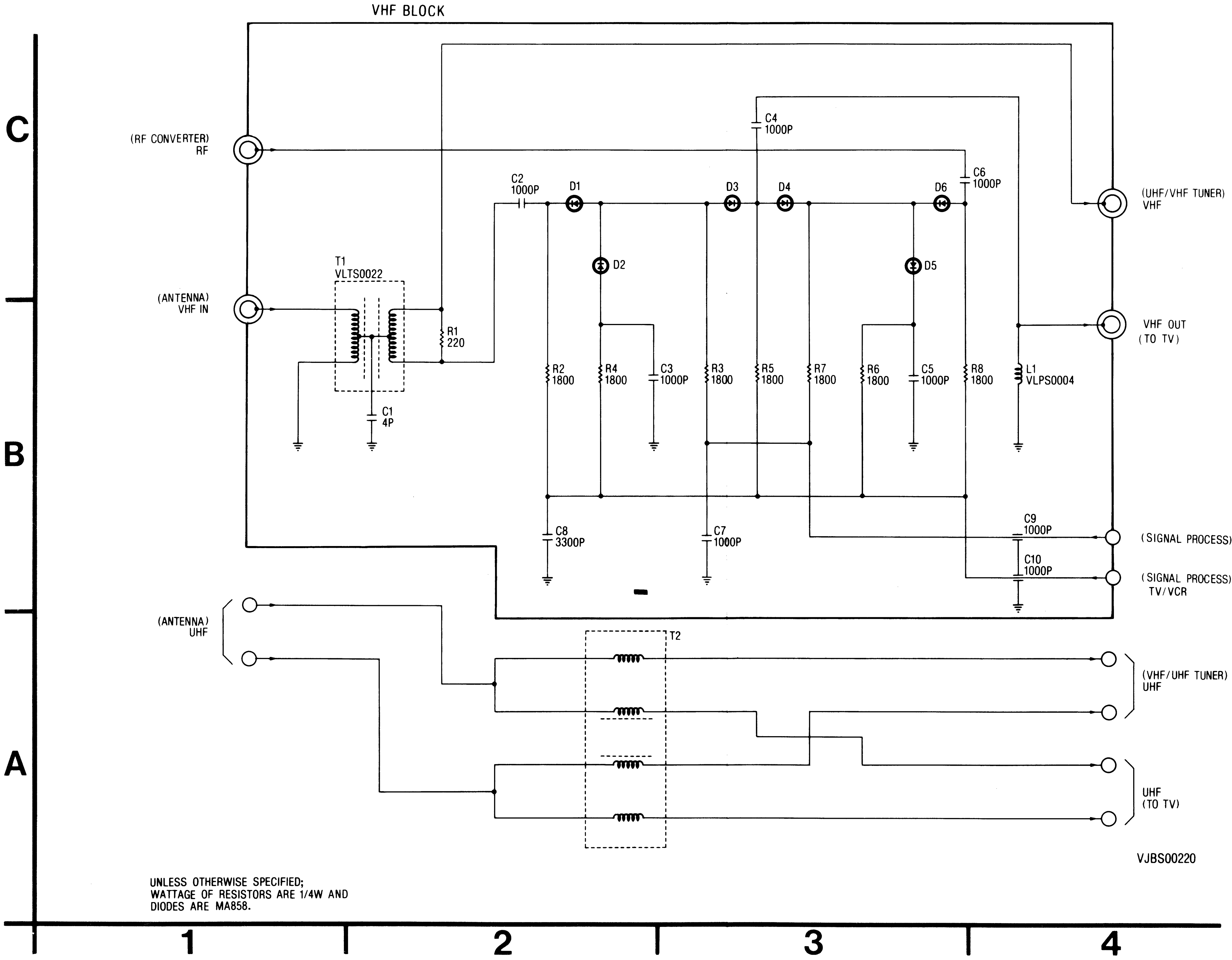
UHF/VHF TUNER UNIT	
Q1	3-C
Q2	1-B
Q3	2-C
Q4	1-B
Q5	3-A
Q6	2-A
Q7	2-A

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

4-22
ANTENNA TERMINAL CIRCUIT
IR RECEIVING DETECTOR CIRCUIT

ANTENNA TERMINAL SCHEMATIC DIAGRAM

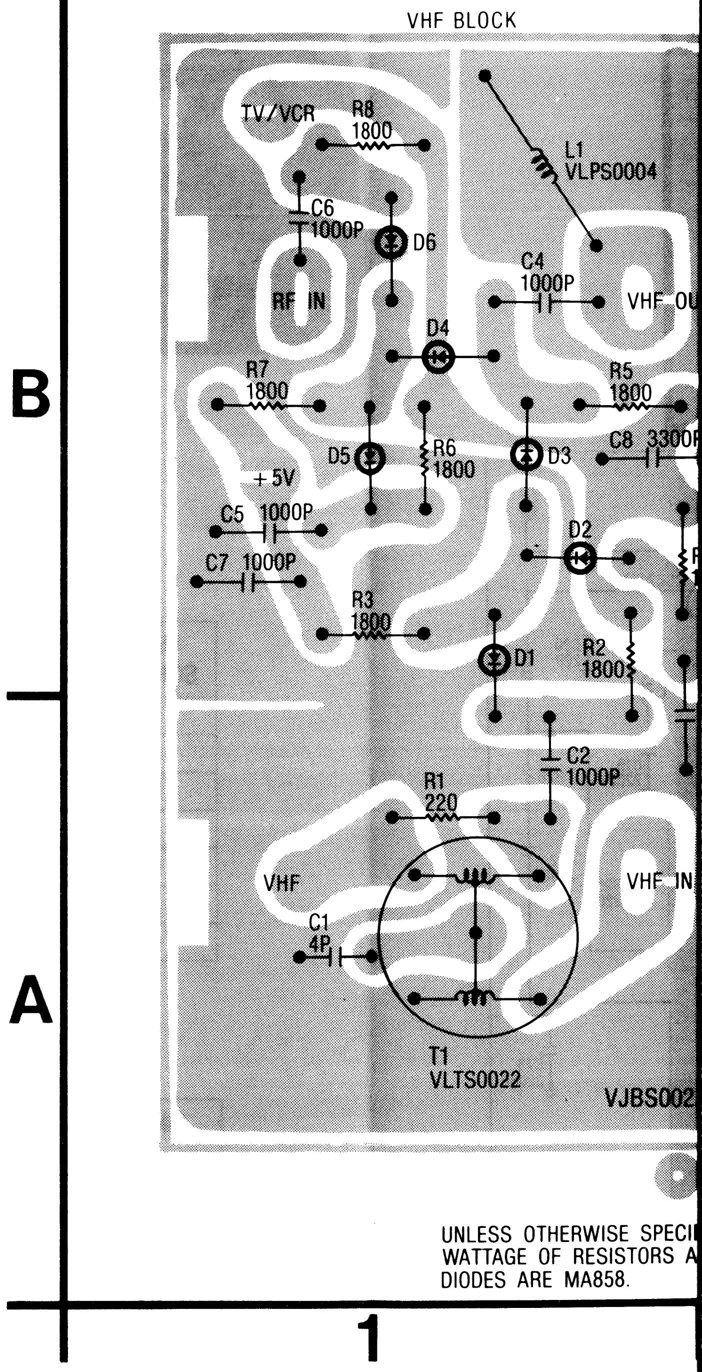
IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.


VHF BLOCK
C
B
A
1
2
3
4
(RF CONVERTER) RF
(ANTENNA) VHF IN
(ANTENNA) UHF
T1 VLTS0022
R1 220
C1 4P
C2 1000P
C3 1000P
C4 1000P
C5 1000P
C6 1000P
C7 1000P
C8 3300P
C9 1000P
C10 1000P
R2 1800
R3 1800
R4 1800
R5 1800
R6 1800
R7 1800
R8 1800
L1 VLPS0004
D1
D2
D3
D4
D5
D6
T2
(UHF/VHF TUNER) VHF
VHF OUT (TO TV)
(SIGNAL PROCESS)
(SIGNAL PROCESS) TV/VCR
(VHF/UHF TUNER) UHF
UHF (TO TV)
VJBS00220

UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS ARE 1/4W AND
DIODES ARE MA858.

ANTENNA TERMINAL UNIT

IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE
SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.

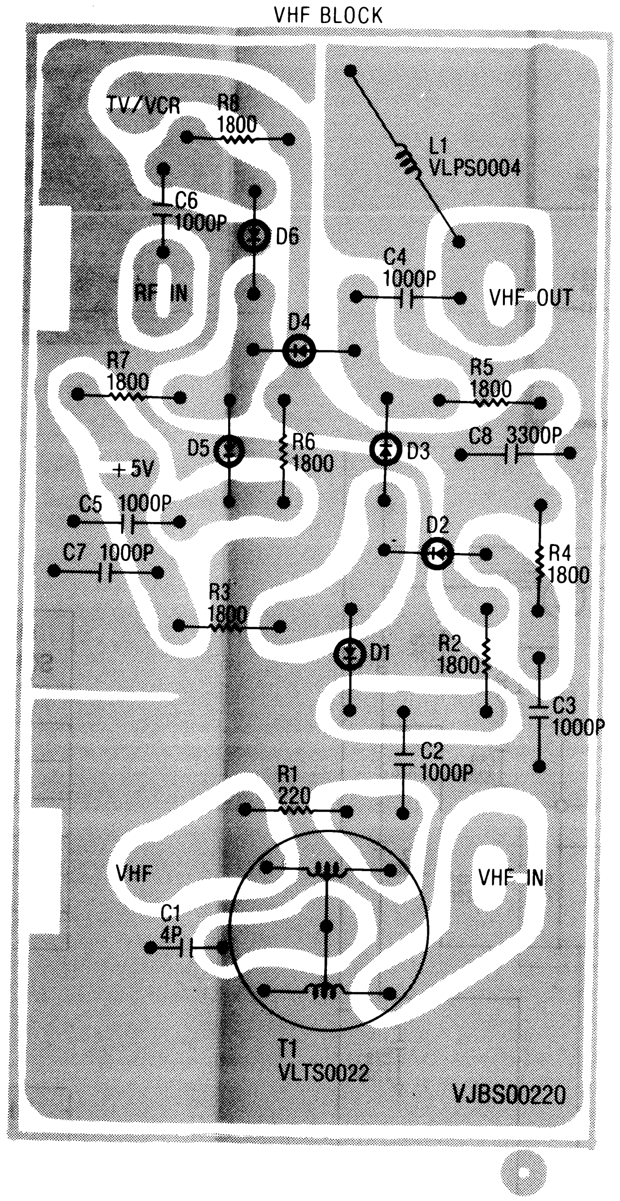

VHF BLOCK
B
A
1
TV/VCR
R8 1800
L1 VLPS0004
C6 1000P
D6
RF IN
C4 1000P
VHF OU
D4
R7 1800
R5 1800
R6 1800
D5
D3
C8 3300
+5V
C5 1000P
C7 1000P
D2
R3 1800
D1
R2 1800
C2 1000P
R1 220
VHF
VHF IN
C1 4P
T1 VLTS0022
VJBS002

UNLESS OTHERWISE SPECI
WATTAGE OF RESISTORS A
DIODES ARE MA858.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES
ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL
HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SE
(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

ITENNA TERMINAL UNIT

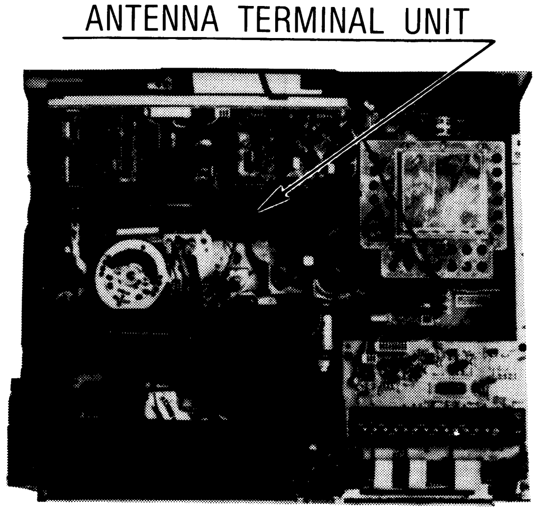
IMPORTANT NOTICE:
IF UNIT PARTS ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED.
DURING SERVICING, PLEASE REPLACE AS A UNIT.


VHF BLOCK
TV/VCR
R8 1800
L1 VLPS0004
C6 1000P
D6
RF IN
C4 1000P
VHF OUT
D4
R7 1800
R5 1800
D5
R6 1800
D3
C8 3300P
+5V
C5 1000P
C7 1000P
D2
R4 1800
R3 1800
D1
R2 1800
C3 1000P
C2 1000P
R1 220
VHF
VHF IN
C1 4P
T1 VLTS0022
VJBS00220

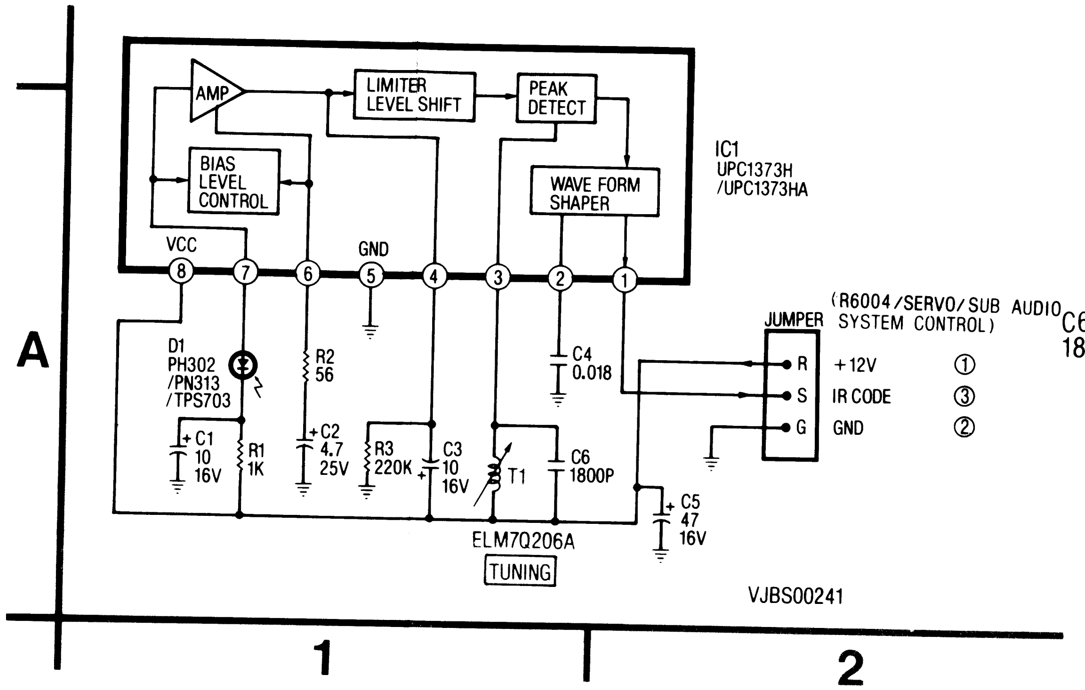
UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS ARE 1/4W AND
DIODES ARE MA858.

1

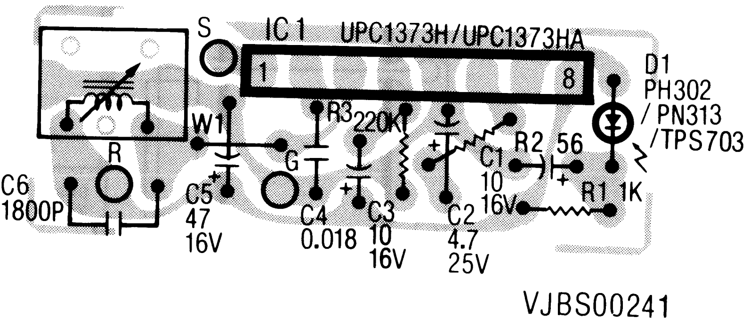
CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE
LLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL
IQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE
ECTION OF THIS SERVICE MANUAL.


ANTENNA TERMINAL UNIT

IR RECEIVING DETECTOR SCHEMATIC DIAGRAM (PV-1530)

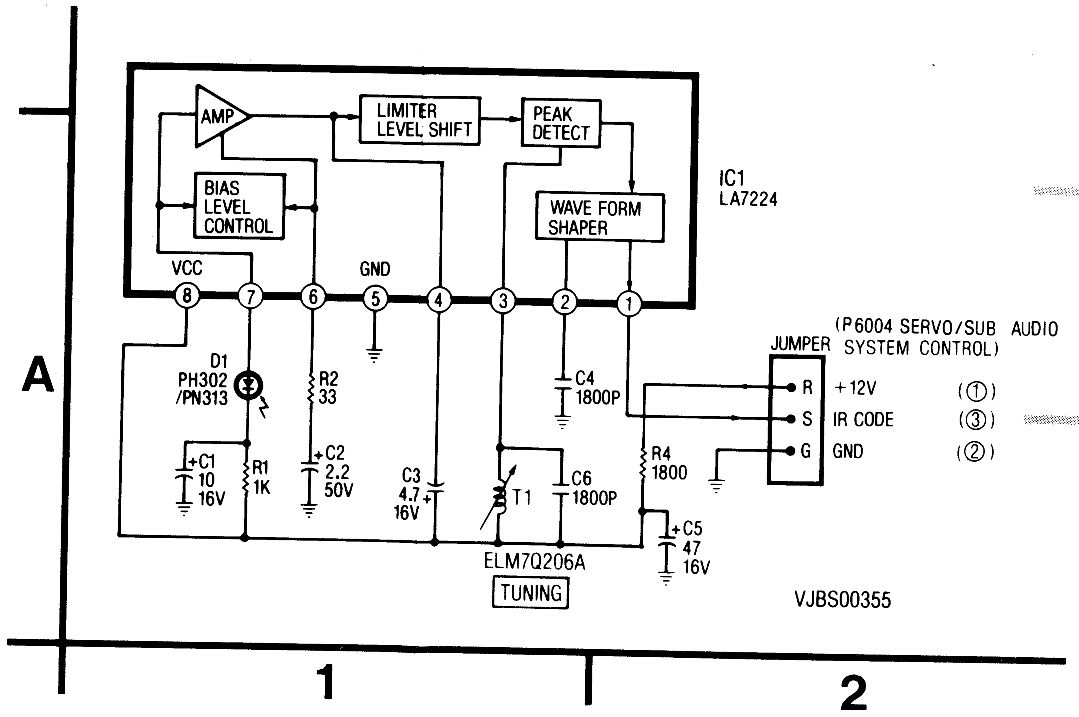

A
AMP
LIMITER LEVEL SHIFT
PEAK DETECT
BIAS LEVEL CONTROL
WAVE FORM SHAPER
IC1 UPC1373H /UPC1373HA
VCC
GND
8
7
6
5
4
3
2
1
D1 PH302 /PN313 /TPS703
R2 56
C4 0.018
C1 10 16V
R1 1K
C2 4.7 25V
R3 220K
C3 10 16V
T1
C6 1800P
C5 47 16V
ELM7Q206A
TUNING
JUMPER
(R6004/SERVO/SUB AUDIO SYSTEM CONTROL)
R
S
G
+12V
IR CODE
GND
①
③
②
VJBS00241
1
2

IR RECEIVING DETECTOR UNIT VEQS0285 (PV-1530)

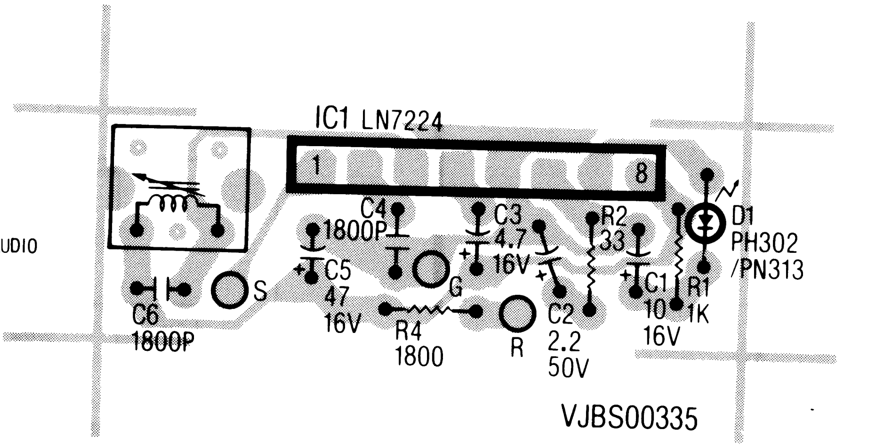

S
IC1 UPC1373H/UPC1373HA
1
8
D1 PH302 / PN313 /TPS703
W1
R3 220K
R2 56
R
G
C6 1800P
C5 47 16V
C4 0.018
C3 10 16V
C2 4.7 25V
C1 10 16V
R1 1K
VJBS00241

IR WIRELESS RECIEVING DETECTOR UNIT

IR RECEIVING DETECTOR SCHEMATIC DIAGRAM (PV-1530)

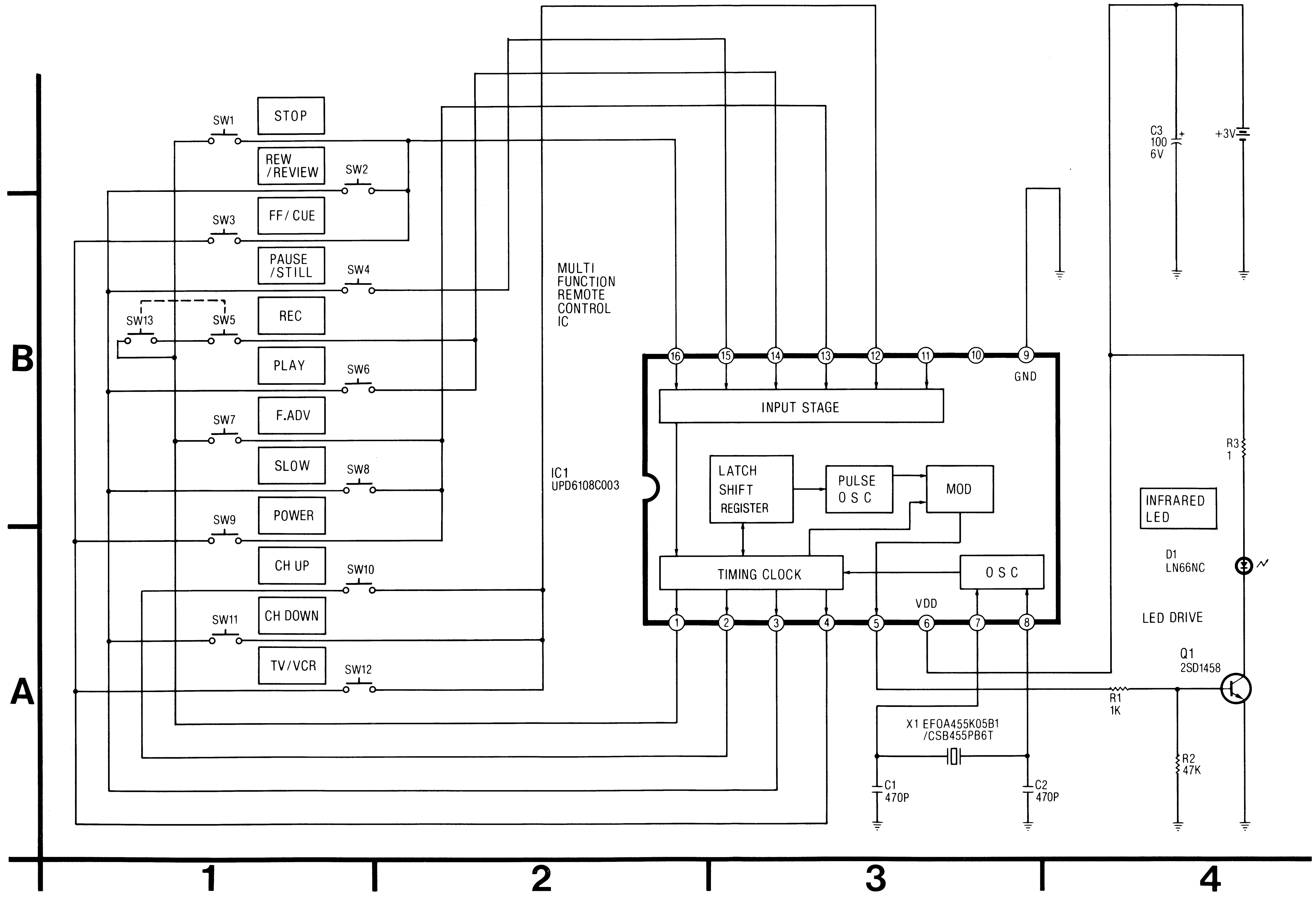

A
AMP
LIMITER LEVEL SHIFT
PEAK DETECT
BIAS LEVEL CONTROL
WAVE FORM SHAPER
IC1 LA7224
VCC
GND
8
7
6
5
4
3
2
1
D1 PH302 /PN313
R2 33
C4 1800P
C1 10 16V
R1 1K
C2 2.2 50V
C3 4.7 16V
T1
C6 1800P
R4 1800
C5 47 16V
ELM7Q206A
TUNING
JUMPER
(P6004 SERVO/SUB AUDIO SYSTEM CONTROL)
R
S
G
+12V
IR CODE
GND
(①)
(③)
(②)
VJBS00355
1
2

IR RECEIVING DETECTOR UNIT VEQS0293 (PV-1530)


IC1 LN7224
1
8
C4 1800P
C3 4.7 16V
R2 33
D1 PH302 /PN313
C5 47 16V
C6 1800P
S
G
R4 1800
R
C2 2.2 50V
C1 10 16V
R1 1K
VJBS00335

IR WIRELESS TRANSMITTER SCHEMATIC DIAGRAM
(PV-1530)

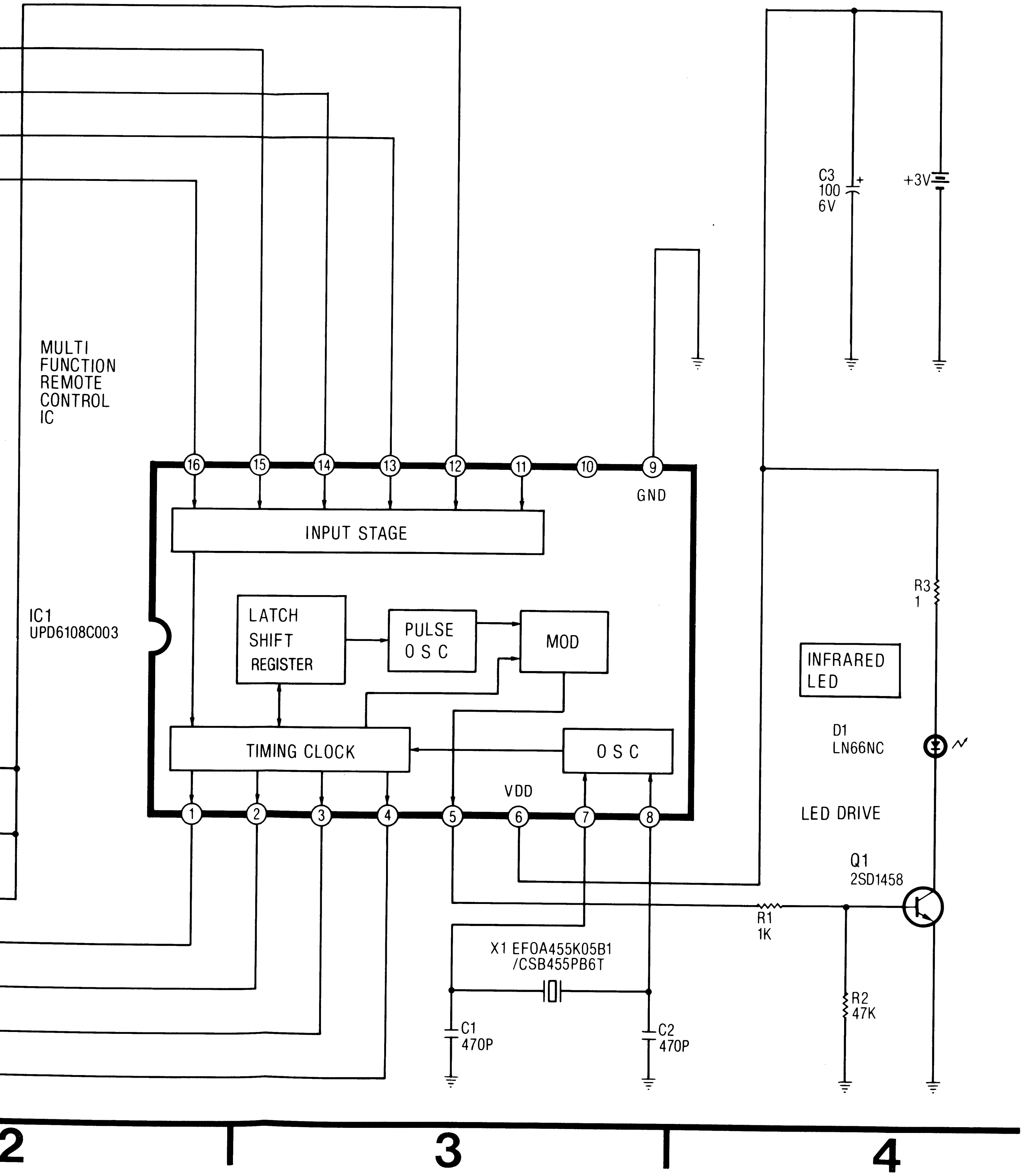
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.



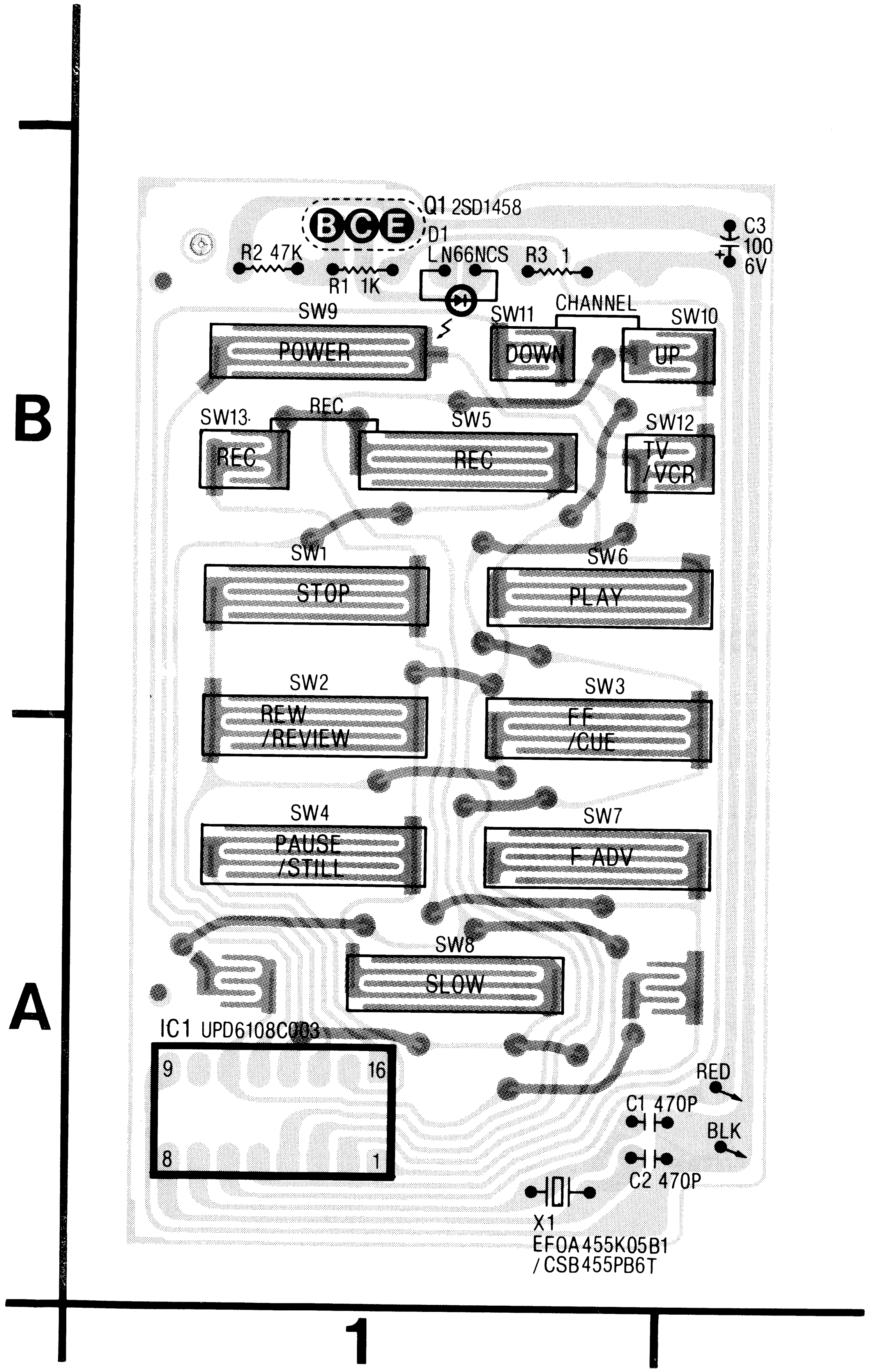
SW1
STOP
REW /REVIEW
SW2
SW3
FF/CUE
PAUSE /STILL
SW4
SW13
SW5
REC
PLAY
SW6
SW7
F.ADV
SLOW
SW8
SW9
POWER
CH UP
SW10
SW11
CH DOWN
TV/VCR
SW12
MULTI FUNCTION REMOTE CONTROL IC
IC1
UPD6108C003
16
15
14
13
12
11
10
9
GND
INPUT STAGE
LATCH SHIFT REGISTER
PULSE OSC
MOD
TIMING CLOCK
OSC
1
2
3
4
5
6
7
8
VDD
X1 EFOA455K05B1 /CSB455PB6T
C1 470P
C2 470P
C3 100 6V
+3V
R3 1
INFRARED LED
D1 LN66NC
LED DRIVE
Q1 2SD1458
R1 1K
R2 47K
A
B
1
2
3
4

C DIAGRAM
(PV-1530)

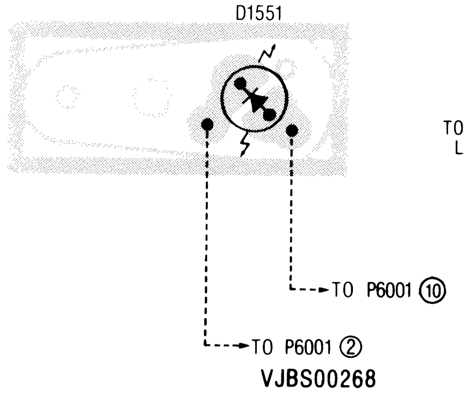
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


MULTI FUNCTION REMOTE CONTROL IC
IC1
UPD6108C003
16
15
14
13
12
11
10
9
GND
INPUT STAGE
LATCH
SHIFT
REGISTER
PULSE
O S C
MOD
TIMING CLOCK
O S C
VDD
1
2
3
4
5
6
7
8
C3
100
6V
+3V
R3
1
INFRARED
LED
D1
LN66NC
LED DRIVE
Q1
2SD1458
R1
1K
R2
47K
X1 EF0A455K05B1
/CSB455PB6T
C1
470P
C2
470P
2
3
4

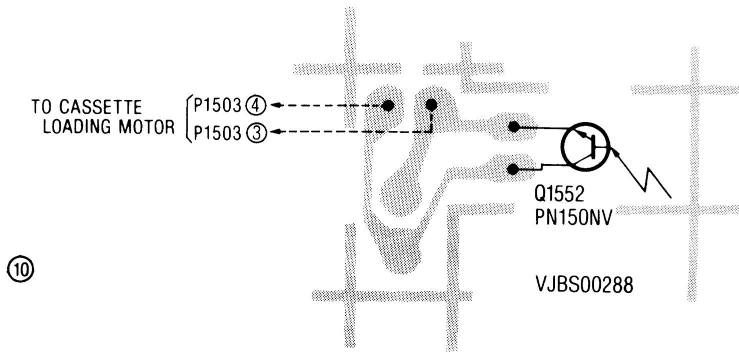
IR WIRELESS TRANSMITTER UNIT
(PV-1530)


B
A
1
Q1 2SD1458
B C E
D1
LN66NCS
R2 47K
R1 1K
R3 1
C3
100
6V
SW9
POWER
SW11
DOWN
CHANNEL
SW10
UP
SW13
REC
REC
SW5
REC
SW12
TV
/VCR
SW1
STOP
SW6
PLAY
SW2
REW
/REVIEW
SW3
FF
/CUE
SW4
PAUSE
/STILL
SW7
F ADV
SW8
SLOW
IC1 UPD6108C003
9
16
8
1
RED
C1 470P
BLK
C2 470P
X1
EF0A455K05B1
/CSB455PB6T

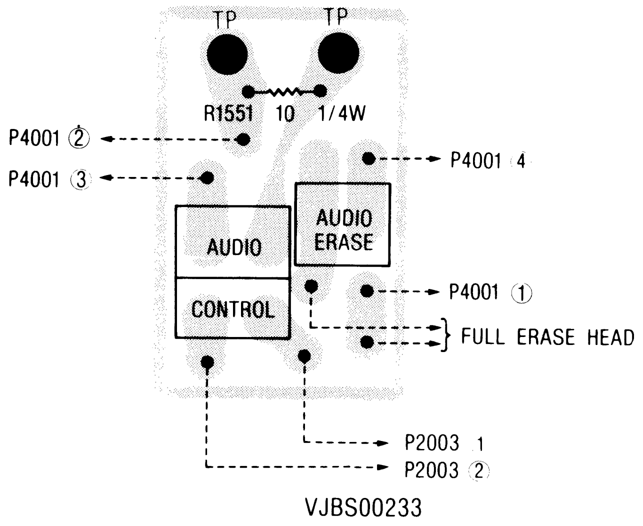
SENSOR LED C.B.A.


D1551
TO P6001 ⑩
TO P6001 ②
VJBS00268

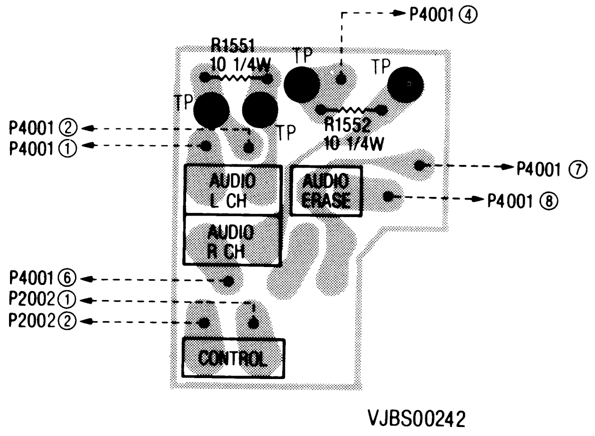
SUPPLY PHOTO TR C.B.A.


TO CASSETTE LOADING MOTOR
P1503 ④
P1503 ③
Q1552
PN150NV
VJBS00288

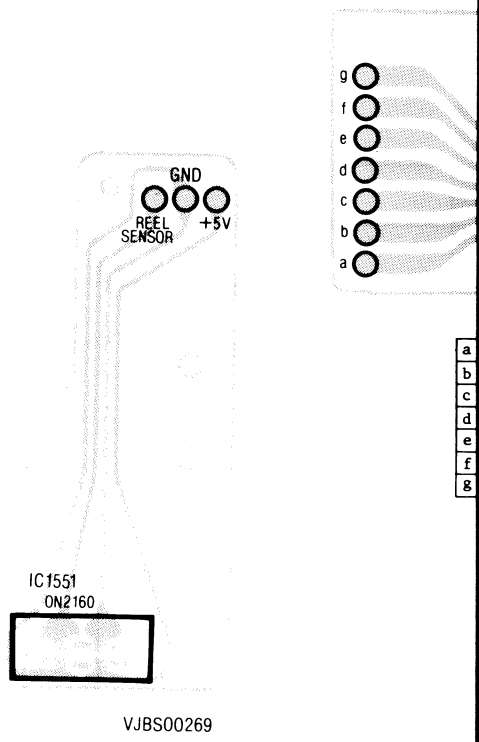
AUDIO/CONTROL HEAD C.B.A. (PV-1525)


TP
TP
R1551 10 1/4W
P4001 ②
P4001 ③
P4001 4
AUDIO
CONTROL
AUDIO ERASE
P4001 ①
FULL ERASE HEAD
P2003 1
P2003 ②
VJBS00233

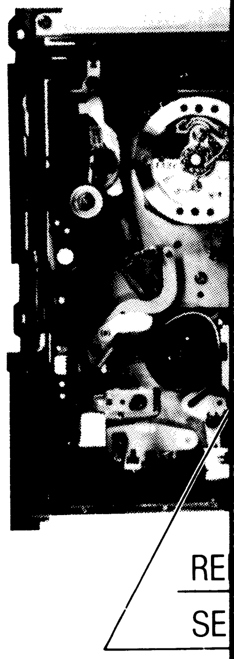
AUDIO/CONTROL HEAD C.B.A. (PV-1530)


P4001 ④
R1551 10 1/4W
TP
TP
TP
TP
R1552 10 1/4W
P4001 ②
P4001 ①
AUDIO L CH
AUDIO ERASE
AUDIO R CH
P4001 ⑦
P4001 ⑧
P4001 ⑥
P2002 ①
P2002 ②
CONTROL
VJBS00242

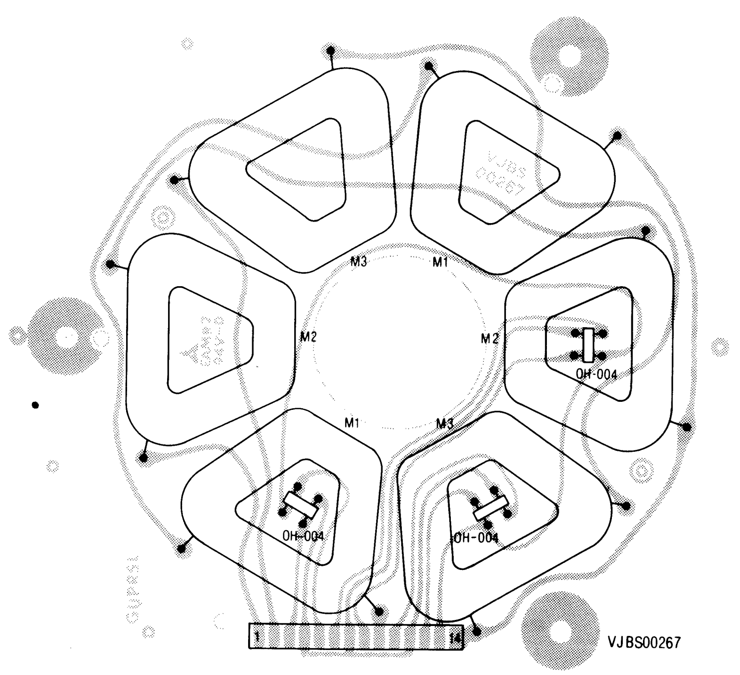
REEL SENSOR C.B.A. VEPS00269A


g
f
e
d
c
b
a
GND
REEL SENSOR
+5V
a
b
c
d
e
f
g
IC1551
ON2160
VJBS00269

AUDIO/CON

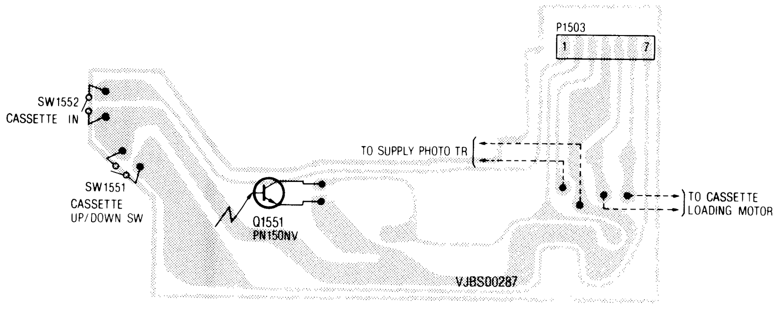


CAPSTAN STATOR COIL ASS'Y VEMS0058


M3
M1
M2
M2
M1
M3
OH-004
OH-004
OH-004
1
14
VJBS00267

1	MAIN COIL 2
2	MAIN COIL 3
3	H3 –
4	
5	H3 +
6	H1 –
7	
8	H1 +
9	MAIN COIL 1
10	H2 –
11	VH +
12	H2 +
13	VH –
14	

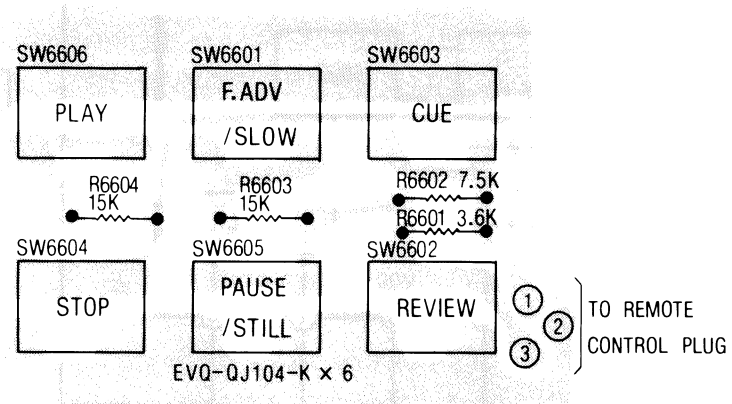
CASSETTE LOADING MOTOR C.B.A.


P1503
1
7
SW1552
CASSETTE IN
SW1551
CASSETTE UP/DOWN SW
Q1551
PN150NV
TO SUPPLY PHOTO TR
TO CASSETTE LOADING MOTOR
VJBS00287

P1503

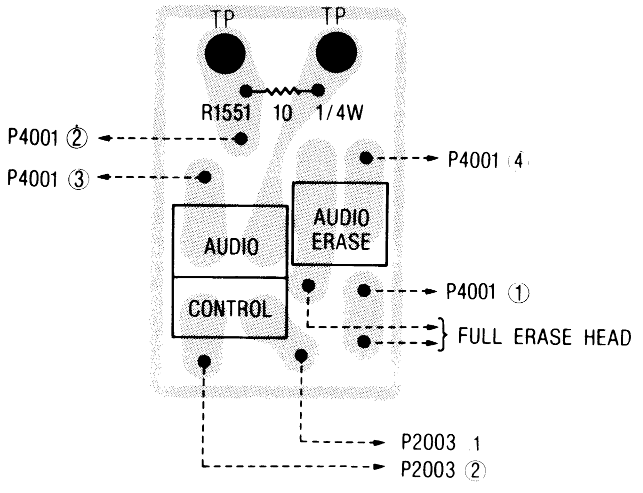
1	CASSETTE DOWN SW
2	TAKEUP PHOTO TR
3	SUPPLY PHOTO TR
4	GND
5	CASSETTE Ⓜ UNLOADING Ⓗ
6	CASSETTE Ⓜ LOADING Ⓗ
7	CASSETTE IN SW

WIRED TRANSMITTER (7FUNCTION) UNIT (PV-1525)


SW6606
PLAY
SW6601
F.ADV /SLOW
SW6603
CUE
R6604 15K
R6603 15K
R6602 7.5K
R6601 3.6K
SW6604
STOP
SW6605
PAUSE /STILL
SW6602
REVIEW
①
②
③
TO REMOTE CONTROL PLUG
EVQ-QJ104-K × 6

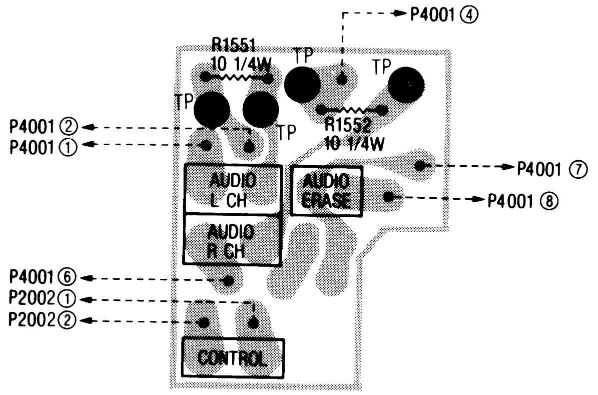
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

AUDIO/CONTROL HEAD C.B.A. (PV-1525)


TP
TP
R1551 10 1/4W
P4001 ②
P4001 ③
P4001 4
AUDIO
ERASE
AUDIO
CONTROL
P4001 ①
FULL ERASE HEAD
P2003 1
P2003 ②

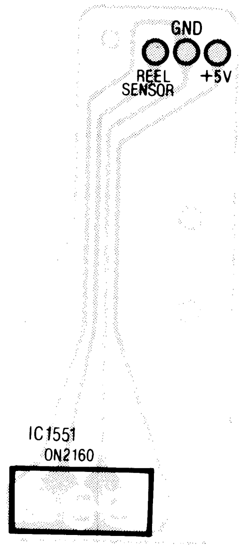
VJBS00233

AUDIO/CONTROL HEAD C.B.A. (PV-1530)


P4001 ④
R1551 10 1/4W
TP
TP
TP
TP
R1552 10 1/4W
P4001 ②
P4001 ①
P4001 ⑦
P4001 ⑧
AUDIO L CH
AUDIO ERASE
AUDIO R CH
P4001 ⑥
P2002 ①
P2002 ②
CONTROL

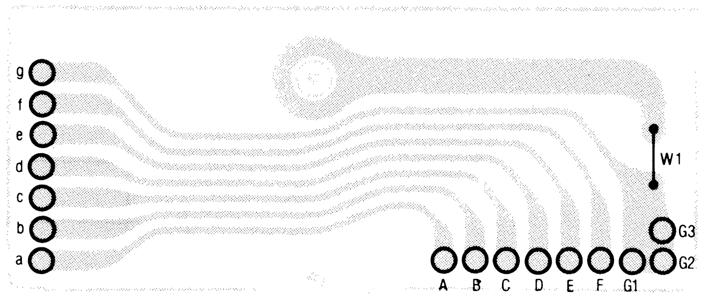
VJBS00242

REEL SENSOR C.B.A. VEPS00269A


GND
REEL SENSOR
+5V
IC1551 ON2160

VJBS00269

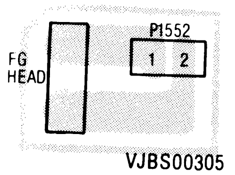
CONNECTION C.B.A.


g
f
e
d
c
b
a
W1
G3
G2
A
B
C
D
E
F
G1

VJBS00296

a	UNSWITCH +12V
b	SENSOR LED PULSE
c	DEW SENSOR
d	POSITION 1
e	POSITION 2
f	POSITION 3
g	GND

CAPSTAN FG C.B.A.

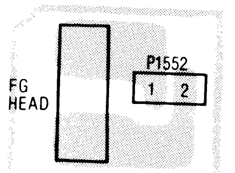

FG HEAD
P1552
1 2

P1552

1	GND
2	CAP Ⓜ FG

VJBS00305

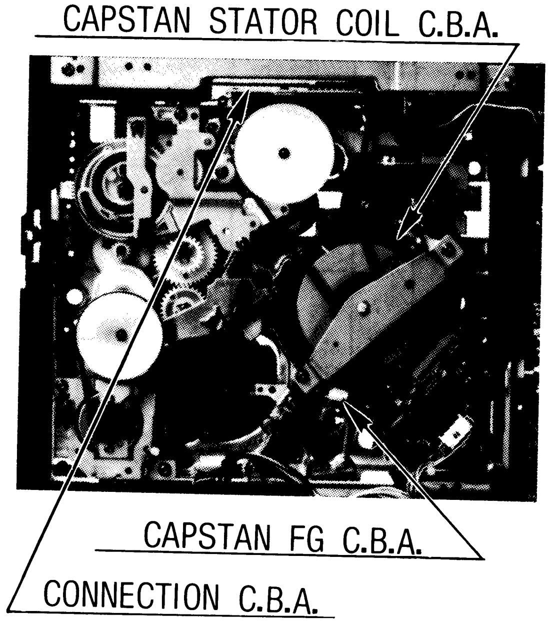
CAPSTAN FG C.B.A.

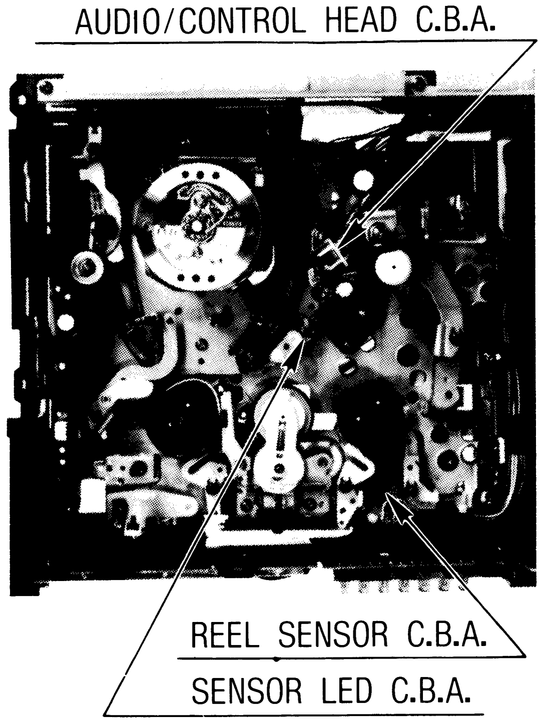

FG HEAD
P1552
1 2

P 1552

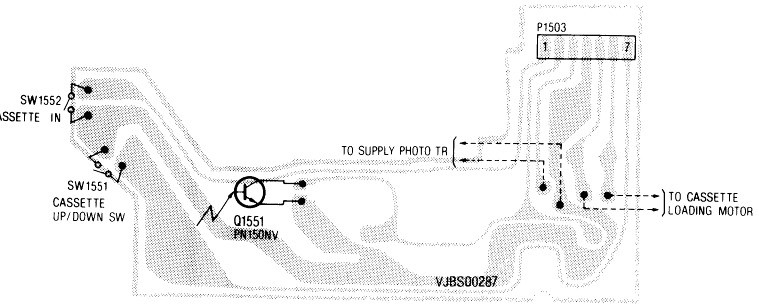
1	GND
2	CAP Ⓜ FG

VJBS00306


CAPSTAN STATOR COIL C.B.A.
CAPSTAN FG C.B.A.
CONNECTION C.B.A.


AUDIO/CONTROL HEAD C.B.A.
REEL SENSOR C.B.A.
SENSOR LED C.B.A.

CASSETTE LOADING MOTOR C.B.A.

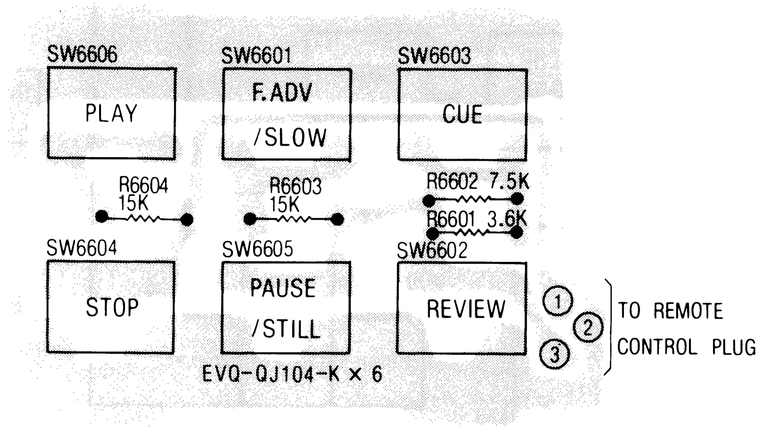

P1503
1
7
SW1552
SSETTE IN
SW1551
CASSETTE
UP/DOWN SW
Q1551
PN150NV
TO SUPPLY PHOTO TR
TO CASSETTE
LOADING MOTOR

VJBS00287

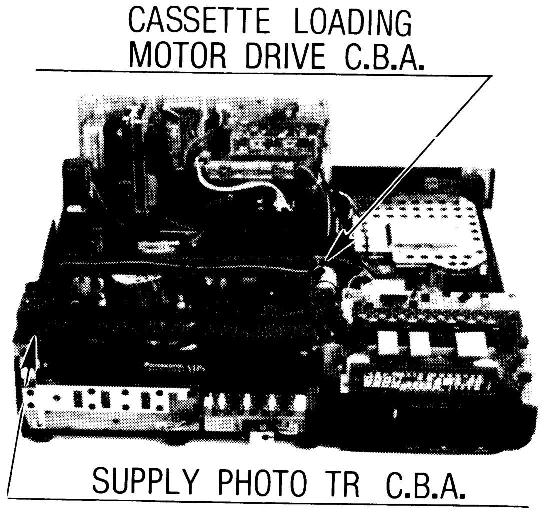
P1503

1	CASSETTE DOWN SW
2	TAKEUP PHOTO TR
3	SUPPLY PHOTO TR
4	GND
5	CASSETTE Ⓜ UNLOADING Ⓗ
6	CASSETTE Ⓜ LOADING Ⓗ
7	CASSETTE IN SW

WIRED TRANSMITTER (7FUNCTION) UNIT (PV-1525)


SW6606
PLAY
SW6601
F.ADV
/SLOW
SW6603
CUE
R6604 15K
R6603 15K
R6602 7.5K
R6601 3.6K
SW6604
STOP
SW6605
PAUSE
/STILL
SW6602
REVIEW
①
②
③
TO REMOTE
CONTROL PLUG

EVQ-QJ104-K × 6

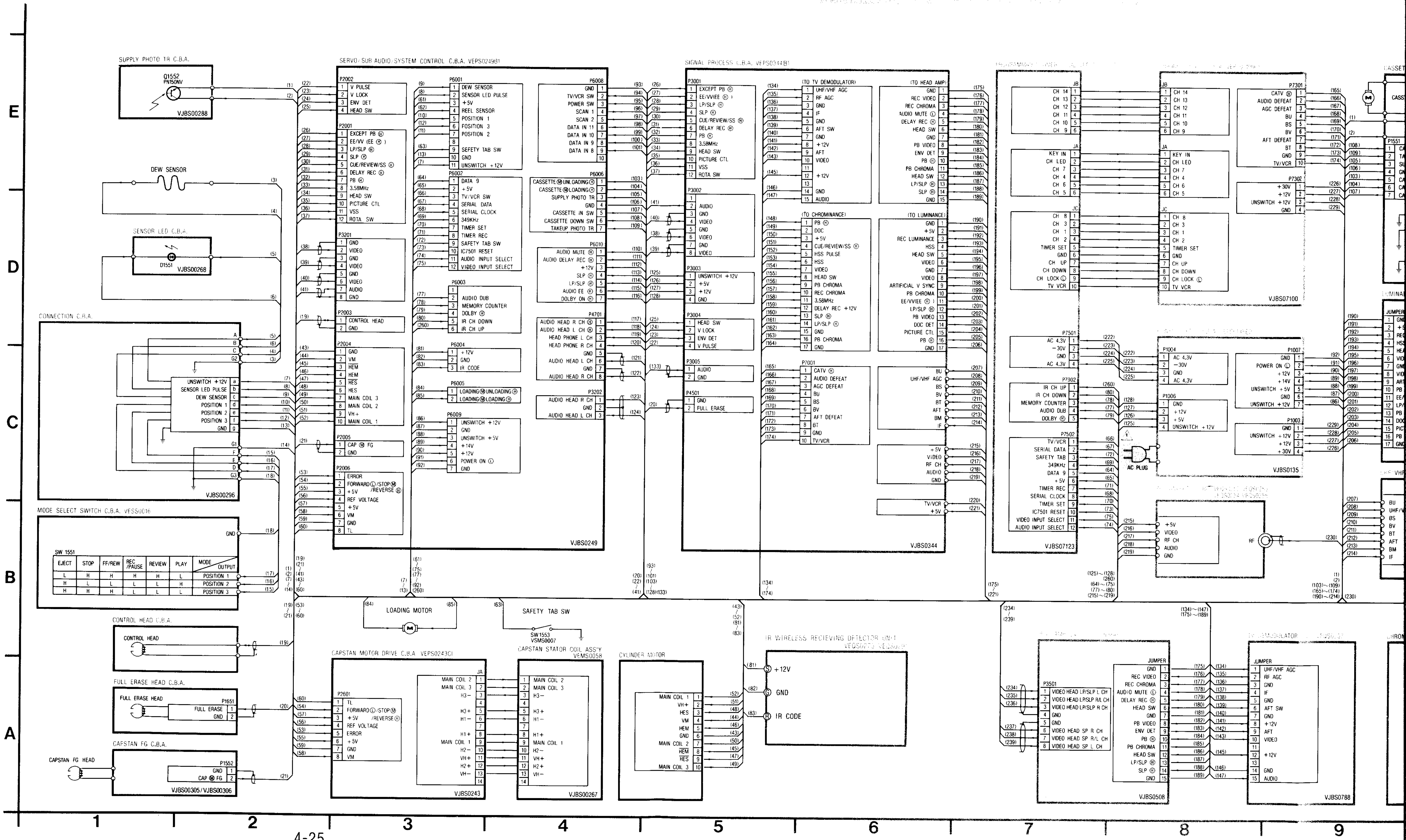

CASSETTE LOADING
MOTOR DRIVE C.B.A.
SUPPLY PHOTO TR C.B.A.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.

INTERCONNECTION SCHEMATIC DIAGRAM (PV-1530)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

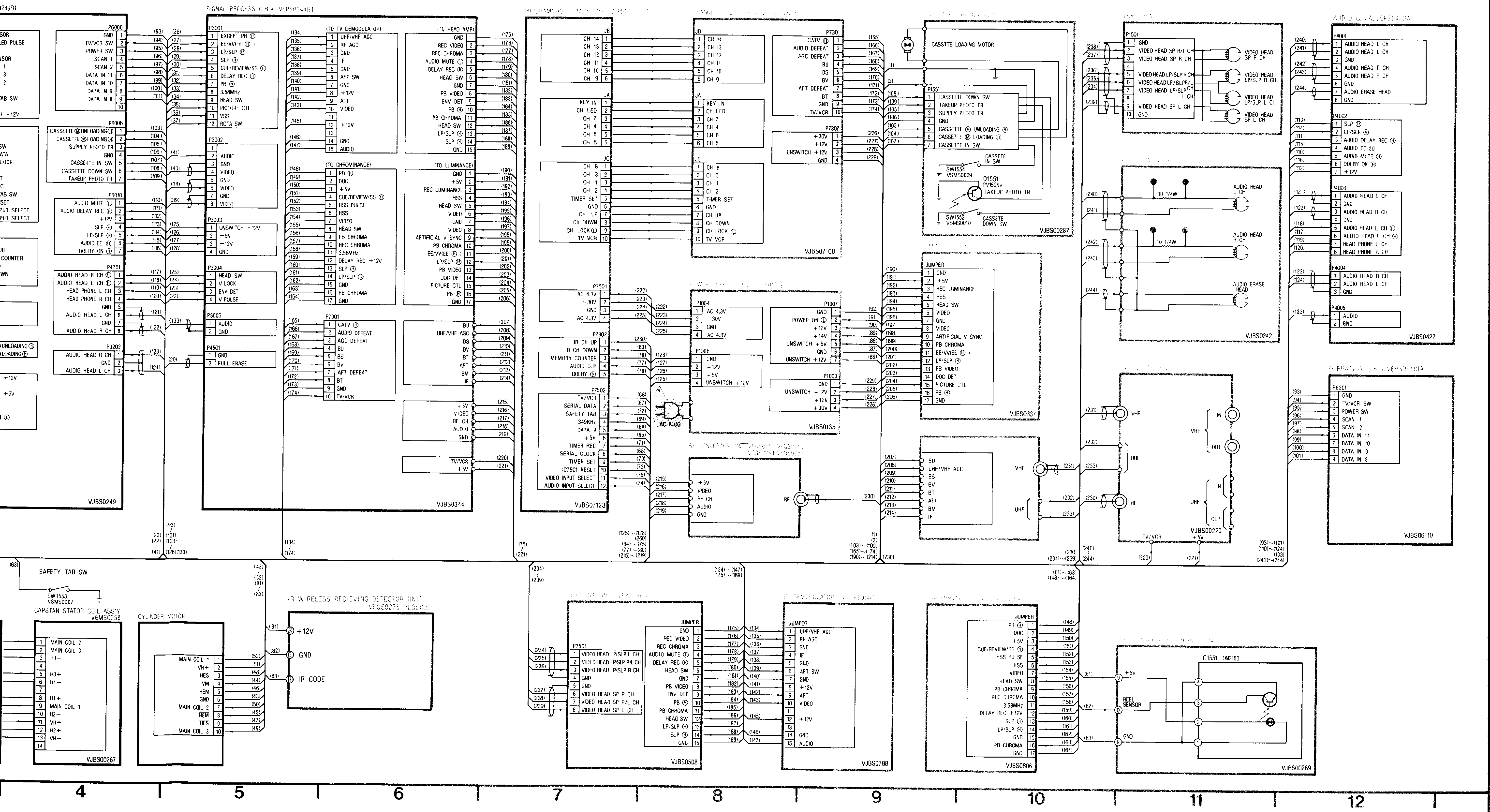
SPECIAL NOTE:
ALL INTEGRATE
ELECTROSTATIC
HANDLING TECH
(ES) DEVICES"


SUPPLY PHOTO TR C.B.A.
Q1552 PN150NV
VJBS00288
DEW SENSOR
SENSOR LED C.B.A.
D1551
VJBS00268
CONNECTION C.B.A.
VJBS00296
MODE SELECT SWITCH C.B.A. VESS0016
SW 1551
EJECT
STOP
FF/REW
REC /PAUSE
REVIEW
PLAY
MODE OUTPUT
POSITION 1
POSITION 2
POSITION 3
CONTROL HEAD C.B.A.
CONTROL HEAD
FULL ERASE HEAD C.B.A.
FULL ERASE HEAD
CAPSTAN FG C.B.A.
CAPSTAN FG HEAD
VJBS00305/VJBS00306
SERVO/SUB AUDIO/SYSTEM CONTROL C.B.A. VEPS0249B1
VJBS0249
LOADING MOTOR
SAFETY TAB SW
SW1553 VSMS0007
CAPSTAN MOTOR DRIVE C.B.A. VEPS0243C1
VJBS0243
CAPSTAN STATOR COIL ASS'Y VEMS0058
VJBS00267
CYLINDER MOTOR
SIGNAL PROCESS C.B.A. VEPS0344B1
VJBS0344
(TO TV DEMODULATOR)
(TO HEAD AMP)
(TO CHROMINANCE)
(TO LUMINANCE)
IR WIRELESS RECIEVING DETECTOR UNIT
+12V
GND
IR CODE
VJBS07123
VJBS07100
VJBS0135
AC PLUG
VJBS0508
VJBS0788
E
D
C
B
A
1
2
3
4
5
6
7
8
9

(PV-1530)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

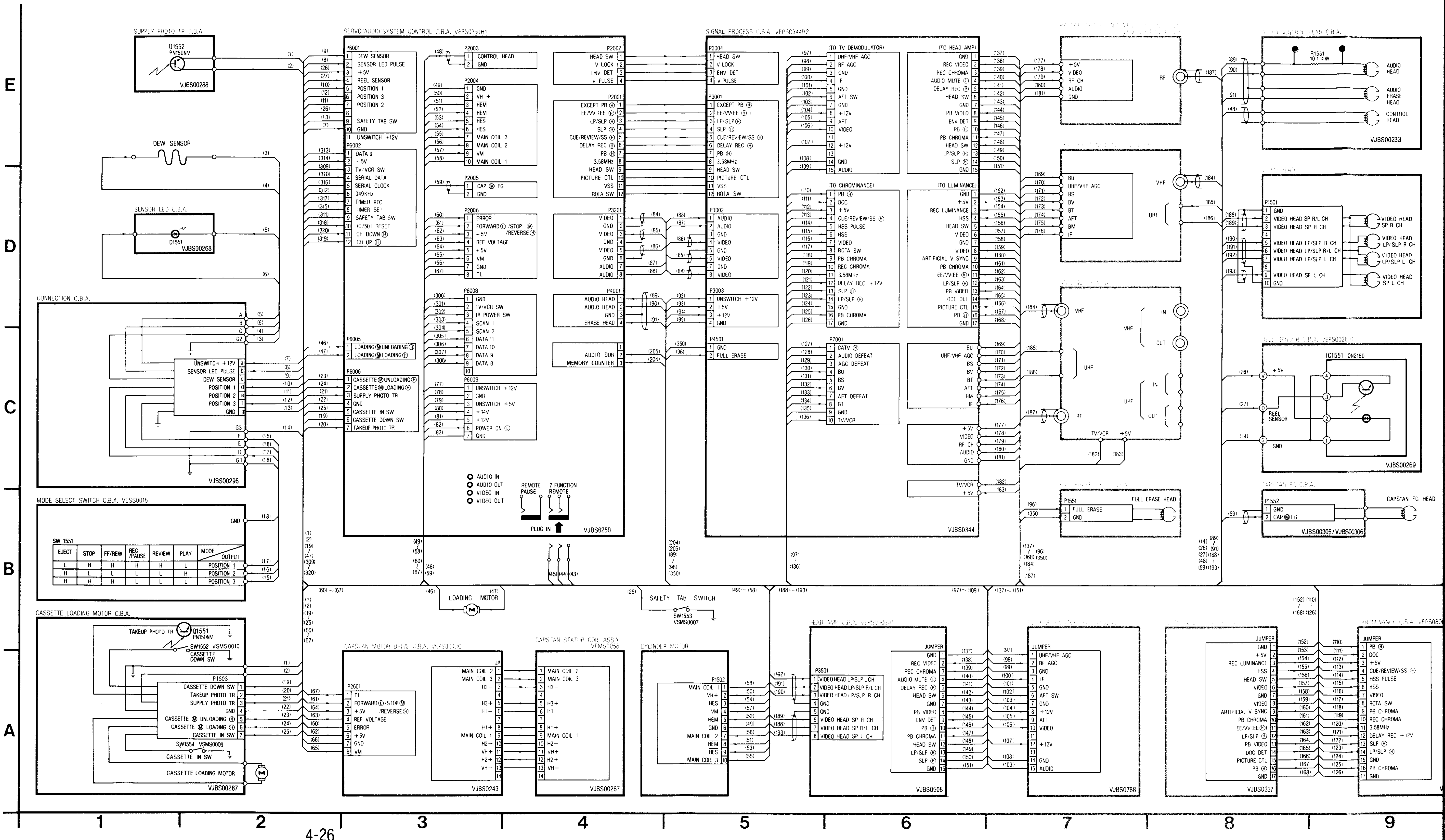
SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


SIGNAL PROCESS C.B.A. VEPS0344B1
P6008
P6006
P6010
P4701
P3202
VJBS0249
P3001
P3002
P3003
P3004
P3005
P4501
P7001
(TO TV DEMODULATOR)
(TO HEAD AMP)
(TO CHROMINANCE)
(TO LUMINANCE)
VJBS0344
P7501
P7902
P7502
VJBS07123
P7301
P7302
VJBS07100
AC PLUG
P1004
P1006
P1007
P1003
VJBS0135
CASSTTE LOADING MOTOR
P1551
SW1554 VSMS0009
Q1551 PV150NV TAKEUP PHOTO TR
SW1552 VSMS0010
CASSETTE IN SW
CASSETTE DOWN SW
VJBS00287
JUMPER
VJBS0337
P1501
VIDEO HEAD SP R CH
VIDEO HEAD LP/SLP R CH
VIDEO HEAD LP/SLP L CH
VIDEO HEAD SP L CH
AUDIO HEAD L CH
AUDIO HEAD R CH
AUDIO ERASE HEAD
10 1/4W
VJBS0242
AUDIO C.B.A. VEPS0422A1
P4001
P4002
P4003
P4004
P4005
VJBS0422
VHF
UHF
IN
OUT
RF
TV/VCR
VJBS00220
P6301
VJBS06110
SAFETY TAB SW
SW1553 VSMS0007
CAPSTAN STATOR COIL ASS'Y VEMS0058
VJBS00267
CYLINDER MOTOR
IR WIRELESS RECIEVING DETECTOR UNIT VEQS0275 VEQS0
+12V
GND
IR CODE
P3501
VJBS0508
VJBS0788
VJBS0806
IC1551 ON2160
REEL SENSOR
VJBS0269
4
5
6
7
8
9
10
11
12

INTERCONNECTION SCHEMATIC DIAGRAM (PV-1525)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

SPECIAL NOTE
ALL INTEGRAT
ELECTROSTATI
HANDLING TEC
(ES) DEVICES



SUPPLY PHOTO TR C.B.A.
Q1552 PN150NV
VJBS00288
DEW SENSOR
SENSOR LED C.B.A.
D1551
VJBS00268
CONNECTION C.B.A.
UNSWITCH +12V
SENSOR LED PULSE
DEW SENSOR
POSITION 1
POSITION 2
POSITION 3
GND
VJBS00296
MODE SELECT SWITCH C.B.A. VESS0016
CASSETTE LOADING MOTOR C.B.A.
TAKEUP PHOTO TR
Q1551 PN150NV
SW1552 VSMS0010
CASSETTE DOWN SW
P1503
CASSETTE DOWN SW
TAKEUP PHOTO TR
SUPPLY PHOTO TR
CASSETTE Ⓜ UNLOADING Ⓗ
CASSETTE Ⓜ LOADING Ⓗ
CASSETTE IN SW
SW1554 VSMS0009
CASSETTE LOADING MOTOR
VJBS00287
SERVO/AUDIO/SYSTEM CONTROL C.B.A. VEPS0250H1
P6001
P6002
P6005
P6006
P2003
P2004
P2005
P2006
P6008
P6009
P2002
P2001
P3201
P4001
CONTROL HEAD
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
CAP Ⓜ FG
IC7501 RESET
AUDIO HEAD
ERASE HEAD
AUDIO DUB
MEMORY COUNTER
AUDIO IN
AUDIO OUT
VIDEO IN
VIDEO OUT
REMOTE PAUSE
7 FUNCTION REMOTE
PLUG IN
VJBS0250
SIGNAL PROCESS C.B.A. VEPS0344B2
P3004
P3001
P3002
P3003
P4501
P7001
(TO TV DEMODULATOR)
(TO HEAD AMP)
(TO CHROMINANCE)
(TO LUMINANCE)
FULL ERASE
VJBS0344
RF
VHF
UHF
IN
OUT
TV/VCR
R1551 10 1/4W
AUDIO HEAD
AUDIO ERASE HEAD
CONTROL HEAD
VJBS00233
P1501
VIDEO HEAD SP R/L CH
VIDEO HEAD SP R CH
VIDEO HEAD LP/SLP R CH
VIDEO HEAD LP/SLP R/L CH
VIDEO HEAD LP/SLP L CH
VIDEO HEAD SP L CH
REEL SENSOR C.B.A. VEPS002
IC1551 ON2160
REEL SENSOR
VJBS00269
P1551
FULL ERASE HEAD
CAPSTAN FG C.B.A.
P1552
CAPSTAN FG HEAD
VJBS00305/VJBS00306
LOADING MOTOR
SAFETY TAB SWITCH
SW1553 VSMS0007
CAPSTAN MOTOR DRIVE C.B.A. VEPS0243C1
P2601
VJBS0243
CAPSTAN STATOR COIL ASSY VEMS0056
VJBS00267
CYLINDER MOTOR
P1502
HEAD AMP C.B.A. VEPS0508A1
P3501
VJBS0508
JUMPER
VJBS0788
VJBS0337
CHROMINANCE C.B.A. VEPS080
E
D
C
B
A
1
2
3
4
5
6
7
8
9

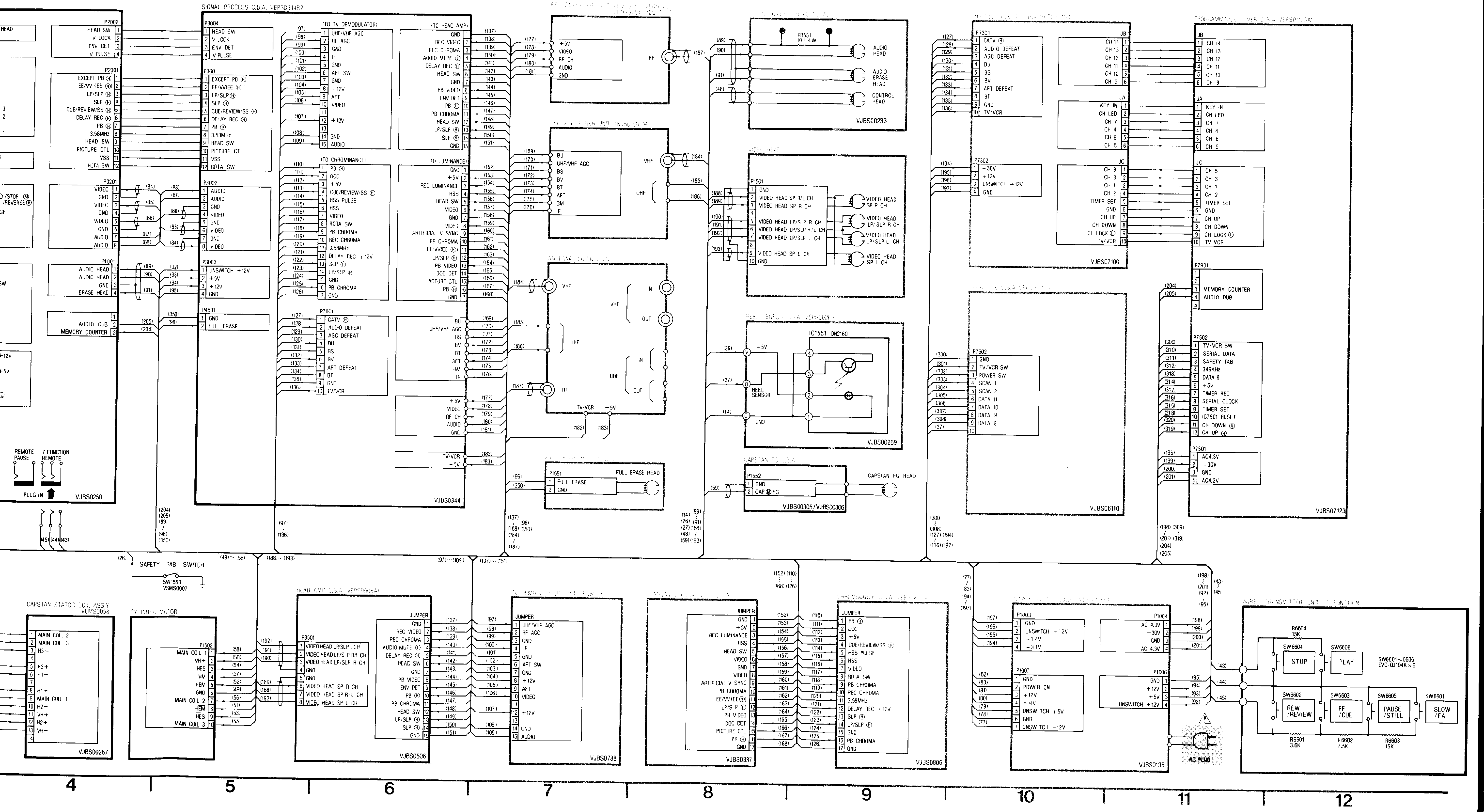
SW 1551

EJECT	STOP	FF/REW	REC /PAUSE	REVIEW	PLAY	MODE / OUTPUT
L	H	H	H	H	L	POSITION 1
H	L	L	L	L	H	POSITION 2
H	H	H	L	L	L	POSITION 3

PV-1525)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

SPECIAL NOTE:
ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" SECTION OF THIS SERVICE MANUAL.


SIGNAL PROCESS C.B.A. VEPS0344B2
VJBS0344
VJBS0250
VJBS00233
VJBS00269
VJBS00305/VJBS00306
VJBS06110
VJBS07100
VJBS07123
VJBS00267
VJBS0508
VJBS0788
VJBS0337
VJBS0806
VJBS0135
CAPSTAN STATOR COIL ASS'Y VEMS0058
CYLINDER MOTOR
HEAD AMP C.B.A. VEPS0506A1
SAFETY TAB SWITCH
SW1553 VSMS0007
IC1551 ON2160
REEL SENSOR
CAPSTAN FG HEAD
FULL ERASE HEAD
AUDIO HEAD
AUDIO ERASE HEAD
CONTROL HEAD
R1551 10 1/4W
VIDEO HEAD SP R CH
VIDEO HEAD LP/SLP R CH
VIDEO HEAD LP/SLP L CH
VIDEO HEAD SP L CH
AC PLUG
REMOTE PAUSE
7 FUNCTION REMOTE
PLUG IN
STOP
PLAY
REW /REVIEW
FF /CUE
PAUSE /STILL
SLOW /FA
SW6601~6606 EVQ-QJ104K × 6
R6604 15K
R6601 3.6K
R6602 7.5K
R6603 15K
4
5
6
7
8
9
10
11
12

ORDER NO. VRD-8404-569
B3

Service Manual

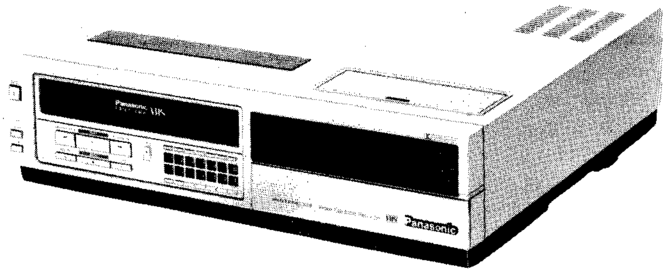
Video Cassette Recorder

Vol. 5

Panasonic
Omnivision VHS

PV-1530
PV-1525

Exploded Views
Replacement Parts List



SPECIFICATIONS

Power Source:	120V AC ±10%, 60Hz ±0.5%
Power Consumption:	Approx. 22 watts
Television System:	EIA Standard (525 lines, 60 fields) NTSC color signal
Video Recording System:	4 rotary heads, helical scanning system Luminance: FM azimuth recording Color signal: Converted subcarrier phase shift recording
Audio Track:	2 track (PV-1525: 1 track)
Tape Format:	Tape width 1/2″ (12.7mm), high density tape
Tape Speed:	SP mode: 1-5/16 i.p.s. (33.35mm/s) LP mode: 21/32 i.p.s. (16.67mm/s) SLP mode: 7/16 i.p.s. (11.12mm/s)
Record/Playback Time:	8 HRS. with 160 min. type tape used in SLP mode
FF/REW Time:	Less than 6 min. with 120 min. type tape
Heads:	Video: 4 rotary heads Audio/Control: 2 stationary head (PV-1525: 1 stationary head) Erase: 1 full track erase 1 audio track erase
Input Level:	Video: VIDEO IN Jack (RCA type) 1.0Vp-p, 75Ω unbalanced Audio: AUDIO IN Jack (RCA type) (Right, Left) −20dB, 50kΩ unbalanced MIC IN jack (M6) (Right, Left) −70dB, 4kΩ unbalanced PV-1525: MIC IN jack (M3) −70dB, 4kΩ unbalanced
TV Tuners:	VHF Input: VHF Ch2-Ch13, cable channels "A"~"W", "A-2", "A-1" 75Ω unbalanced UHF Input: Ch14-Ch83, 300Ω balanced
Output Level:	Video: VIDEO OUT Jack (RCA type) 1.0Vp-p, 75Ω unbalanced Audio: AUDIO OUT Jack (RCA type) (Right, Left) −9dB, 1kΩ unbalanced PV-1525: −6dB, 600Ω unbalanced
RF Modulated:	Ch3/Ch4 switchable, 72dBμ, (Open Voltage) 75Ω unbalanced
Video Horizontal Resolution:	Color: more than 230 lines B/W: more than 230 lines
Audio Frequency Response: (10dB down)	SP mode: 100Hz~8kHz LP mode: 100Hz~6kHz SLP mode: 150Hz~5kHz
Signal-to-Noise Ratio:	Video: SP mode: better than 41dB LP mode: better than 41dB SLP mode: better than 41dB (Rohde & Schwarz noise meter) Audio: SP mode: better than 42dB LP mode: better than 40dB SLP mode: better than 40dB
Operation Temperature:	41°F—104°F (5°C—40°C)
Operating Humidity:	10%—75%
Weight:	16.8 lbs. (7.6kg) PV-1525: 15.7 lbs. (7.1kg)
Dimensions:	16-15/16″(W)×14-5/16″(D)×4-1/4″(H) (430mm×364mm×108mm)
Accessories Supplied:	• Remote control unit (PV-1525) • Wireless Remote control unit (PV-1530) • VHF connecting cable • 300Ω—75Ω transformer • Twin-lead cable • V-Lock Tool
Available Tapes:	1/2″ VHS video cassette tapes NV-T160 Approx. 1073ft. (327m), 160, 320, or 480 min. NV-T120 Approx. 810ft. (247m), 120, 240, or 360 min. NV-T60 Approx. 417ft. (127m), 60, 120, or 180 min.

Weight and dimensions shown are approximate.

Specifications are subject to change without notice.

Panasonic

Matsushita Engineering & Service Company
Division of Matsushita Electric
Corporation of America
50 Meadowland Parkway, Secaucus,
New Jersey 07094

Panasonic Hawaii Inc.
91-238 Kauhi St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Matsushita Electric
of Canada Limited
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
Ave, 65 De Infanteria, KM 9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

CONTENTS

SPECIFICATIONS .... Cover

INNER PARTS LOCATION 5- 1
  Top View 5- 1
  Bottom View 5- 2

EXPLODED VIEWS 5- 3
  1. Transport Section 5- 3
  2. Moving Mechanism Section - (1) 5- 4
  3. Moving Mechanism Section - (2) 5- 5
  4. Cassette Up Mechanism Section 5- 6
  5. Chassis Frame & Tuner Parts Section (PV-1525) 5- 7
  5. Chassis Frame & Tuner Parts Section (PV-1530) 5- 8
  6. Casing Parts Section 5- 9
  7. Packing Parts & Accessories Section 5-10
  8. Wired Transmitter Unit Section (PV-1525) 5-11
  9. IR Wireless Transmitter Unit Section (PV-1530) 5-12

REPLACEMENT PARTS LIST 5-13
  MECHANICAL REPLACEMENT PARTS LIST 5-13
  ELECTRICAL REPLACEMENT PARTS LIST 5-17

IMPORTANT SAFETY NOTICE

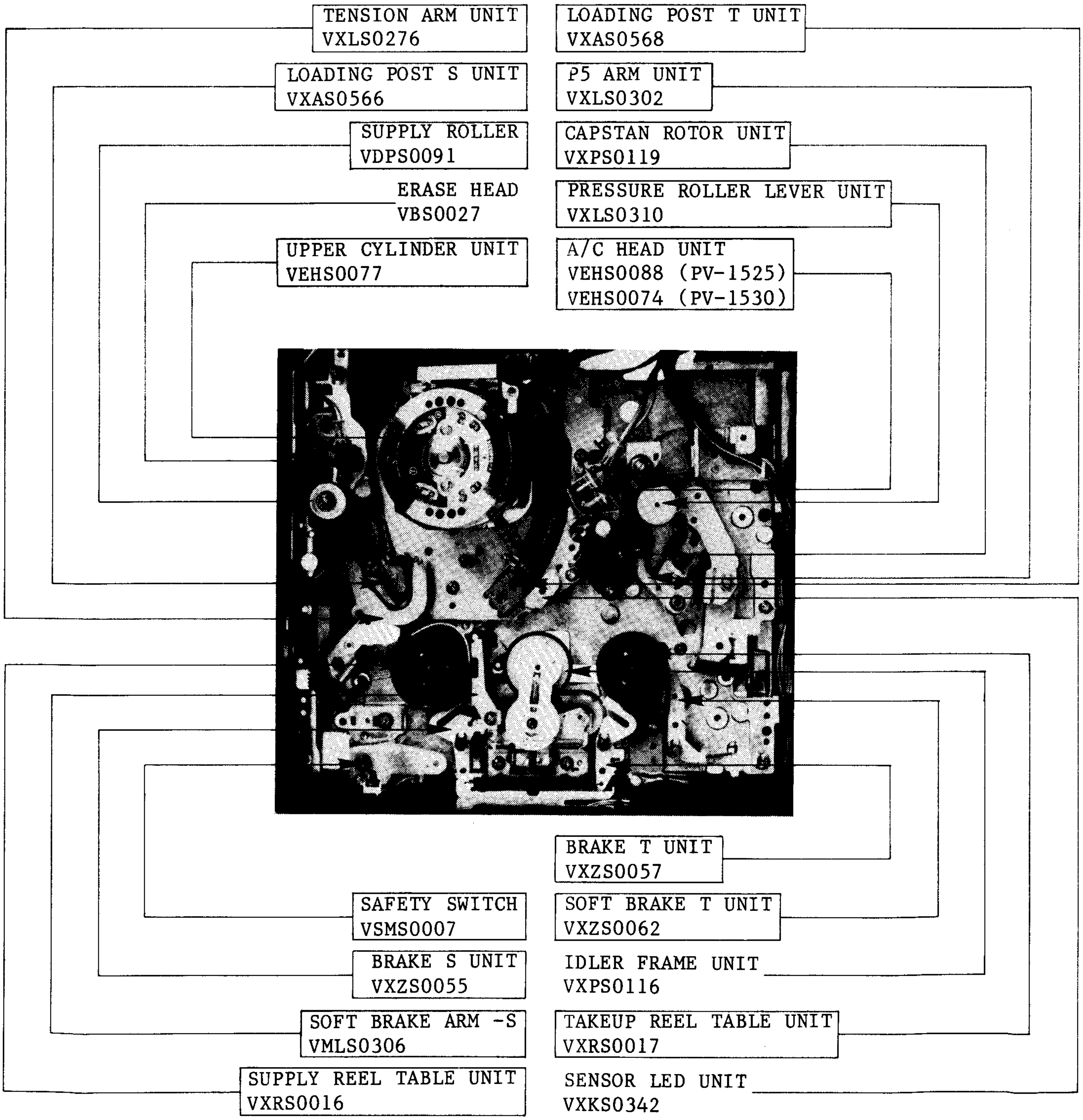
There are special components used in this equipment which are important for safety. These parts are shaded on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

INNER PARTS LOCATION

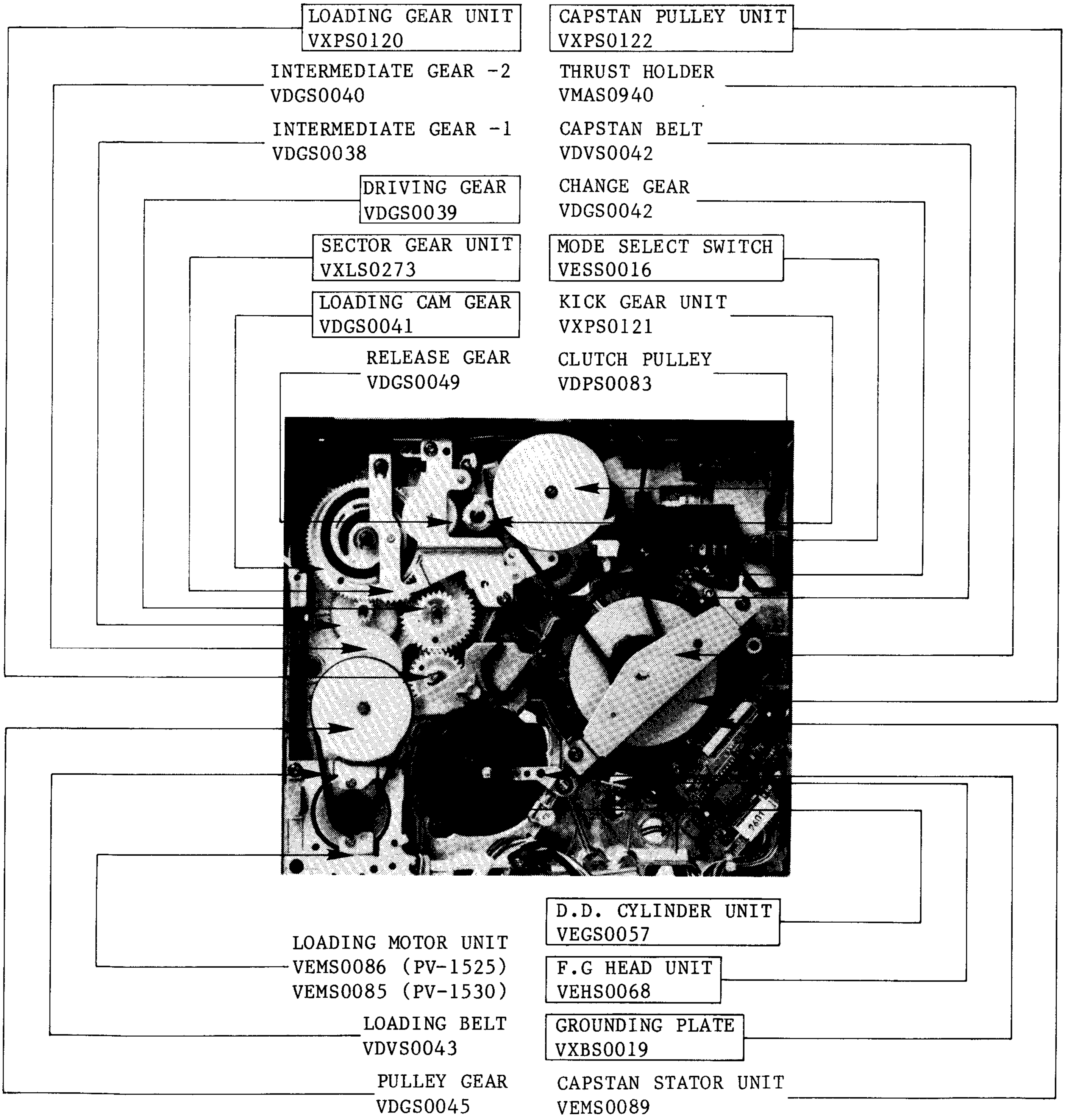
TOP VIEW

Note:

When the mechanical parts surrounded by rectangle are removed or replaced, be sure to perform necessary adjustment or confirmation procedures according to the mechanical adjustment procedures section.


TENSION ARM UNIT VXLS0276
LOADING POST T UNIT VXAS0568
LOADING POST S UNIT VXAS0566
P5 ARM UNIT VXLS0302
SUPPLY ROLLER VDPS0091
CAPSTAN ROTOR UNIT VXPS0119
ERASE HEAD VBS0027
PRESSURE ROLLER LEVER UNIT VXLS0310
UPPER CYLINDER UNIT VEHS0077
A/C HEAD UNIT VEHS0088 (PV-1525) VEHS0074 (PV-1530)
BRAKE T UNIT VXZS0057
SAFETY SWITCH VSMS0007
SOFT BRAKE T UNIT VXZS0062
BRAKE S UNIT VXZS0055
IDLER FRAME UNIT VXPS0116
SOFT BRAKE ARM -S VMLS0306
TAKEUP REEL TABLE UNIT VXRS0017
SUPPLY REEL TABLE UNIT VXRS0016
SENSOR LED UNIT VXKS0342

BOTTOM VIEW

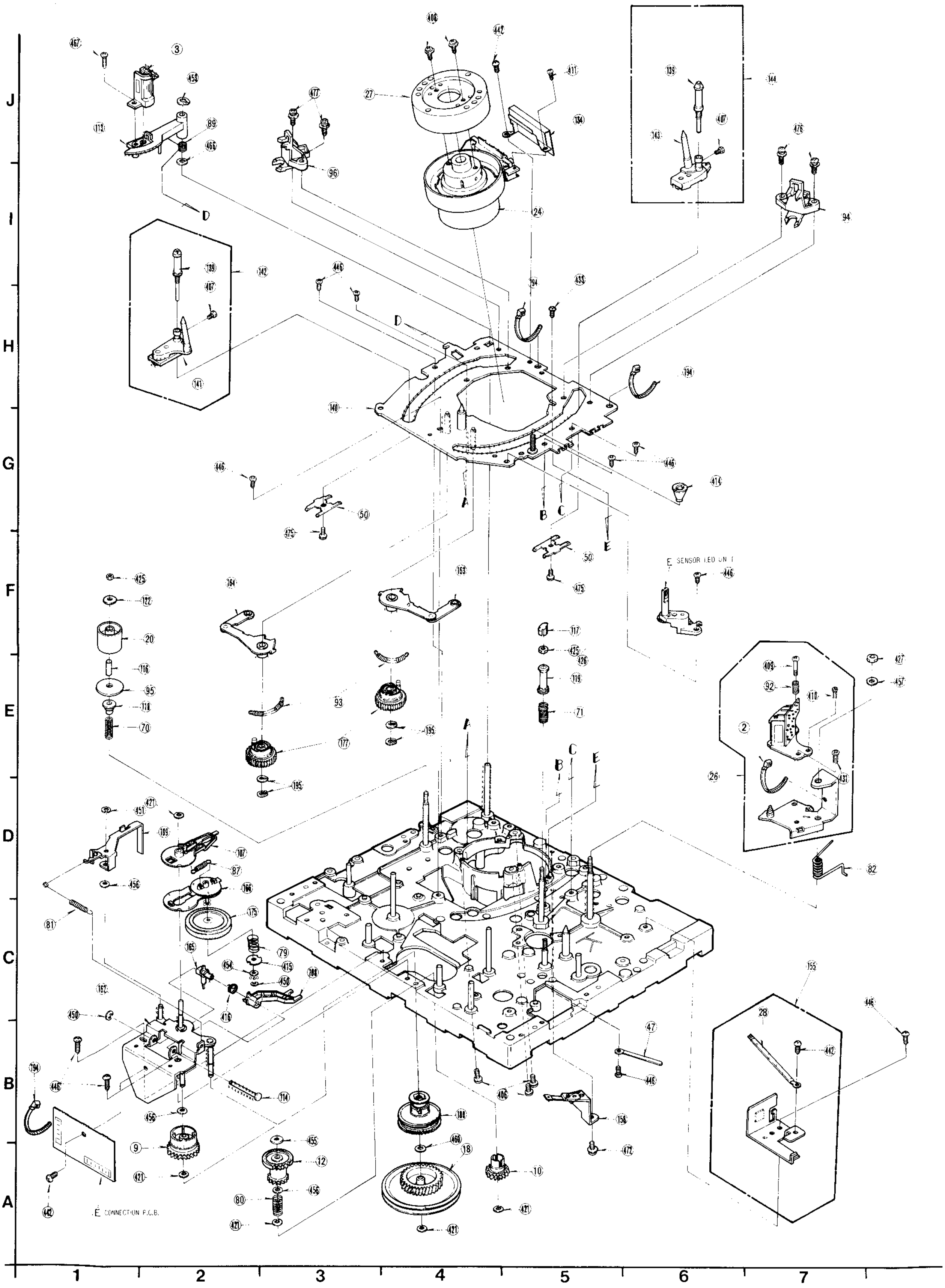

LOADING GEAR UNIT VXPS0120
INTERMEDIATE GEAR -2 VDGS0040
INTERMEDIATE GEAR -1 VDGS0038
DRIVING GEAR VDGS0039
SECTOR GEAR UNIT VXLS0273
LOADING CAM GEAR VDGS0041
RELEASE GEAR VDGS0049
CAPSTAN PULLEY UNIT VXPS0122
THRUST HOLDER VMAS0940
CAPSTAN BELT VDVS0042
CHANGE GEAR VDGS0042
MODE SELECT SWITCH VESS0016
KICK GEAR UNIT VXPS0121
CLUTCH PULLEY VDPS0083
LOADING MOTOR UNIT VEMS0086 (PV-1525) VEMS0085 (PV-1530)
LOADING BELT VDVS0043
PULLEY GEAR VDGS0045
D.D. CYLINDER UNIT VEGS0057
F.G HEAD UNIT VEHS0068
GROUNDING PLATE VXBS0019
CAPSTAN STATOR UNIT VEMS0089

LUBRICATION POINTS

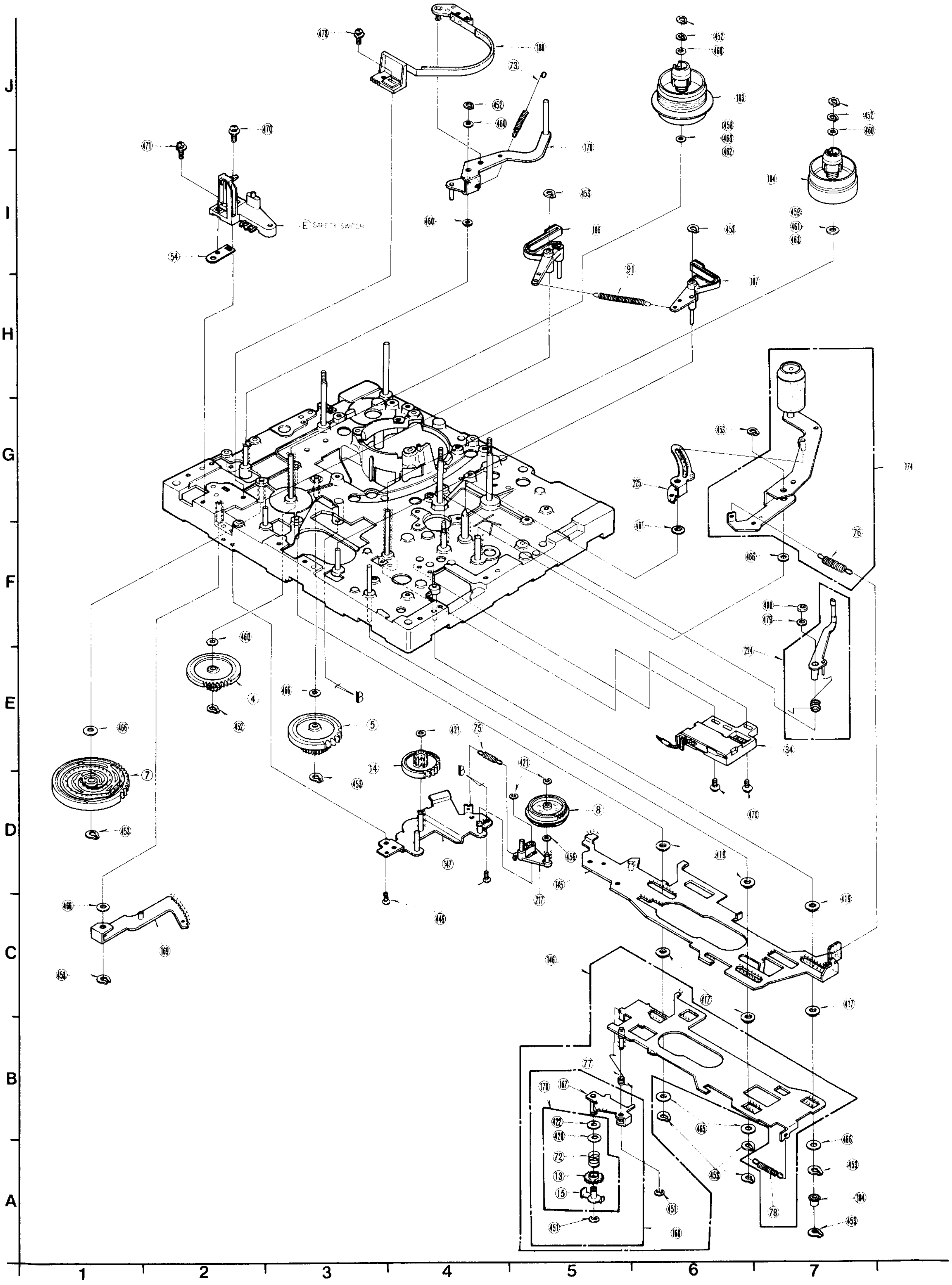
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Marks	Kind of Lubricant	Availability	Part Number
XXX	Molytone Grease	Available From Factory	M0R265
OOO	Spindle Oil	Purchase From Local Supplier	. . . . .
ΔΔΔ	Gummed Adhesive	Purchase From Local Supplier	. . . . .

EXPLODED VIEWS ❶ *Transport Section*

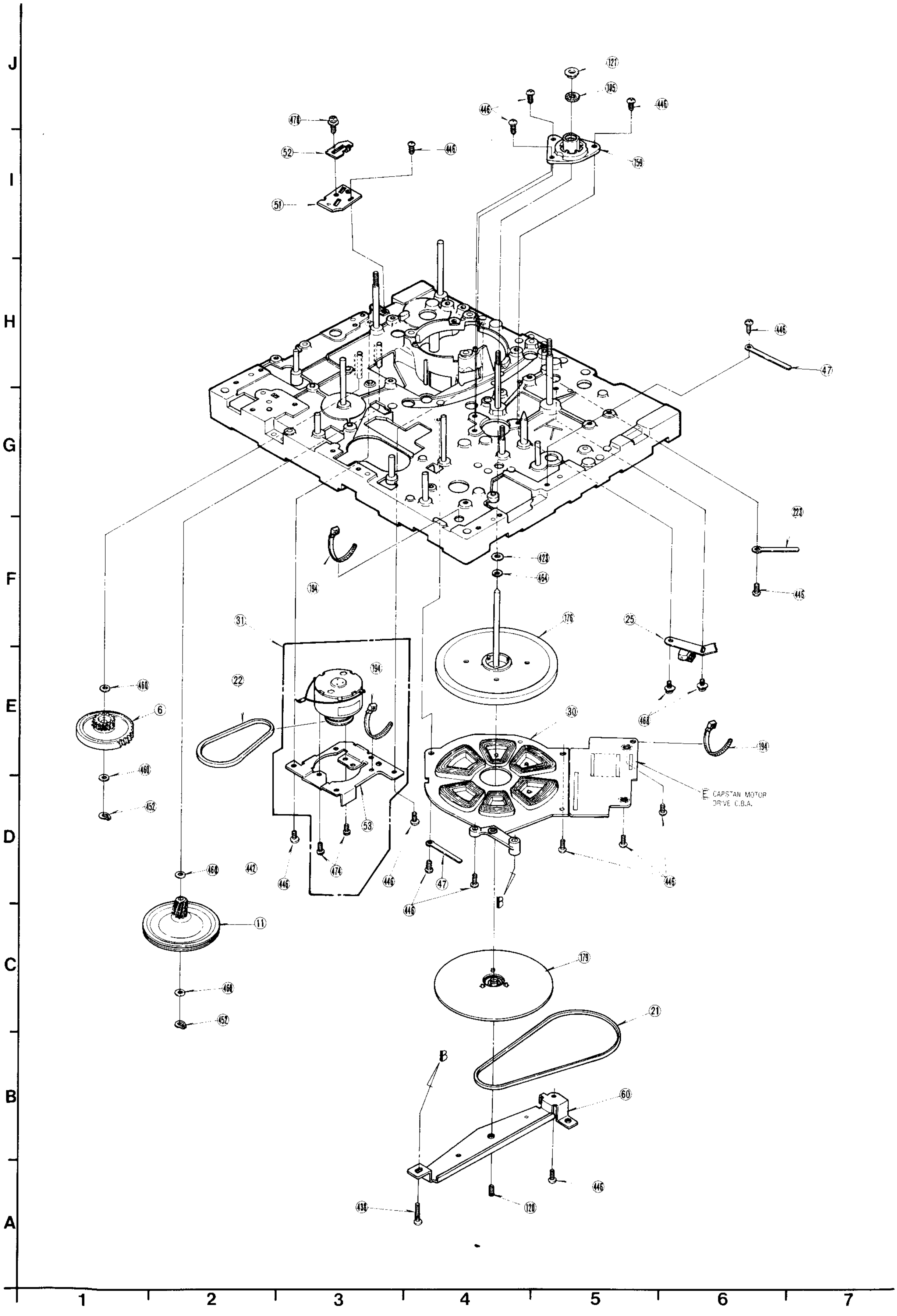

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
467
3
453
113
89
466
D
477
96
408
442
27
24
411
134
139
144
407
143
476
94
139
142
407
141
446
D
140
194
433
194
446
446
414
A
B
C
E
50
475
50
475
E SENSOR LED UNIT
446
425
122
20
116
95
118
70
164
163
93
177
195
195
117
425
426
119
71
A
B
C
E
409
92
410
427
457
2
26
431
82
421
451
109
107
87
456
166
81
175
165
79
454
415
450
188
162
450
416
446
194
446
114
456
9
421
442
E CONNECTION P.C.B.
455
12
456
80
421
188
460
18
10
421
406
47
446
158
472
155
28
442
446

❷ *Moving Mechanism Section-(1)*

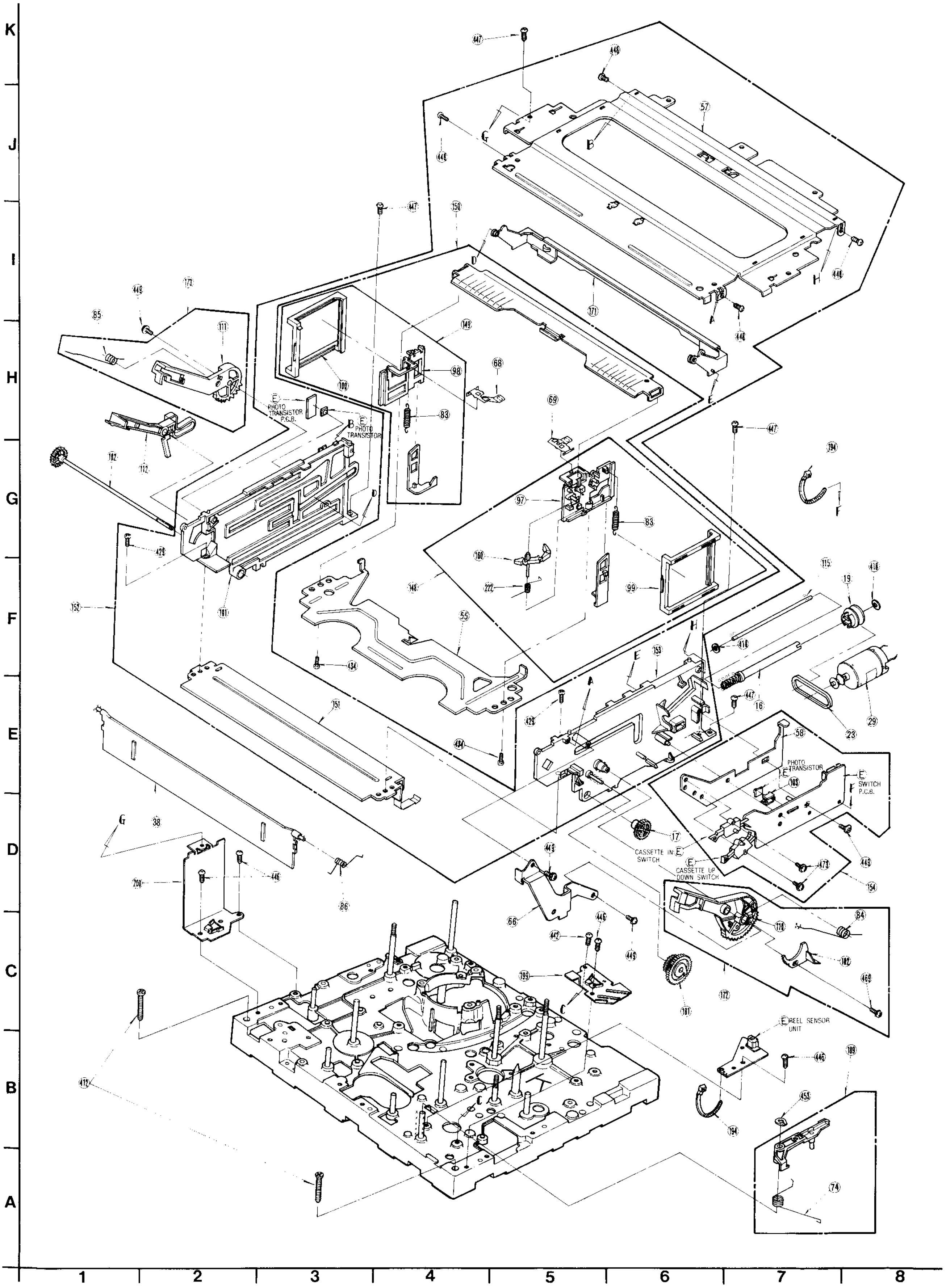


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
476
188
73
452
460
170
183
458
460
462
452
460
184
459
461
463
471
478
E' SAFETY SWITCH
54
453
186
460
453
91
187
453
225
481
174
76
466
480
479
224
460
4
452
466
B
5
421
75
14
453
7
466
453
421
B
8
456
34
470
147
145
277
446
419
419
466
169
454
146
417
417
77
178
167
422
420
72
13
15
451
451
168
465
453
466
453
78
184
453

❸ *Moving Mechanism Section-(2)*


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
121
185
446
446
159
478
52
446
51
446
47
223
446
194
423
464
176
25
31
22
194
460
6
460
452
53
446
474
446
468
30
194
E CAPSTAN MOTOR DRIVE C.B.A.
446
47
446
B
460
442
11
460
452
179
21
B
60
446
120
438

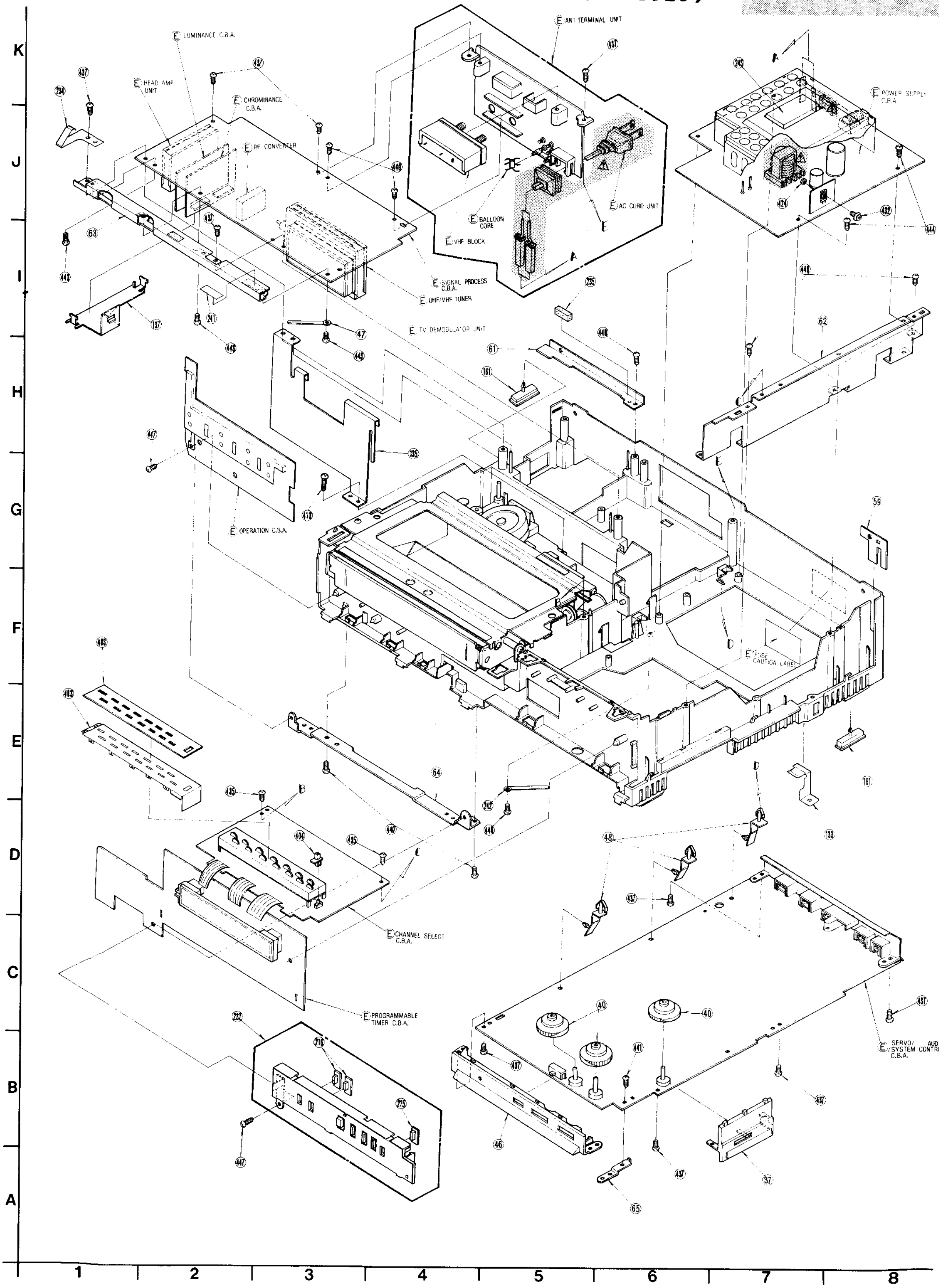
❹ Cassette Up Mechanism Section


K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
447
448
57
G
B
448
448
H
448
A
E
447
150
D
171
173
449
85
111
100
149
98
68
83
69
E
PHOTO TRANSISTOR P.C.B.
B
E
PHOTO TRANSISTOR
112
182
D
97
83
160
222
148
99
429
152
181
55
434
151
447
194
F
115
418
19
418
H
E
153
A
16
447
29
23
429
434
58
PHOTO TRANSISTOR
E
103
E
SWITCH P.C.B.
F
17
CASSETTE IN SWITCH
E
E
CASSETTE UP DOWN SWITCH
449
473
449
154
38
G
200
446
86
66
446
442
449
84
178
182
469
172
199
C
181
412
E
REEL SENSOR UNIT
446
189
C
453
194
74

❺ *Chassis Frame & Tuner Parts Section*

(PV-1525)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,USE ONLY THE SPECIFIED PARTS.

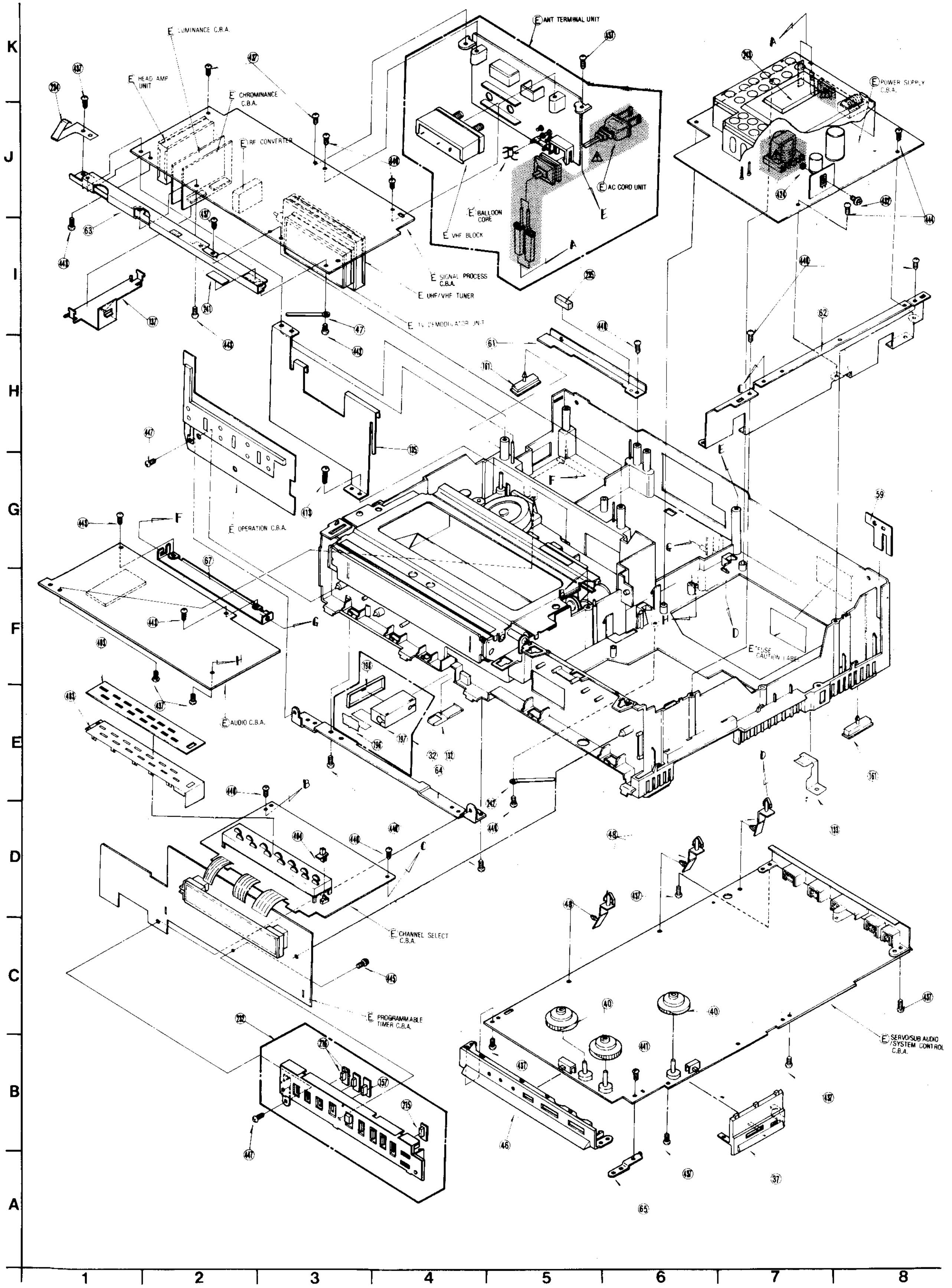


K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
E LUMINANCE C.B.A.
437
234
E HEAD AMP UNIT
437
E CHROMINANCE C.B.A.
E RF CONVERTER
440
63
437
443
137
241
443
47
445
E SIGNAL PROCESS C.B.A.
E UHF/VHF TUNER
E TV DEMODULATOR UNIT
E ANT TERMINAL UNIT
437
E BALLOON CORE
E VHF BLOCK
E AC CORD UNIT
A
E
235
440
61
161
A
243
E POWER SUPPLY C.B.A.
424
432
444
440
62
447
135
413
E OPERATION C.B.A.
59
D
E FUSE CAUTION LABEL
403
413
64
435
B
404
435
440
C
242
440
D
161
133
48
437
E CHANNEL SELECT C.B.A.
E PROGRAMMABLE TIMER C.B.A.
232
216
215
447
40
40
441
437
46
65
437
37
437
437
E SERVO/ AUDIO /SYSTEM CONTROL C.B.A.

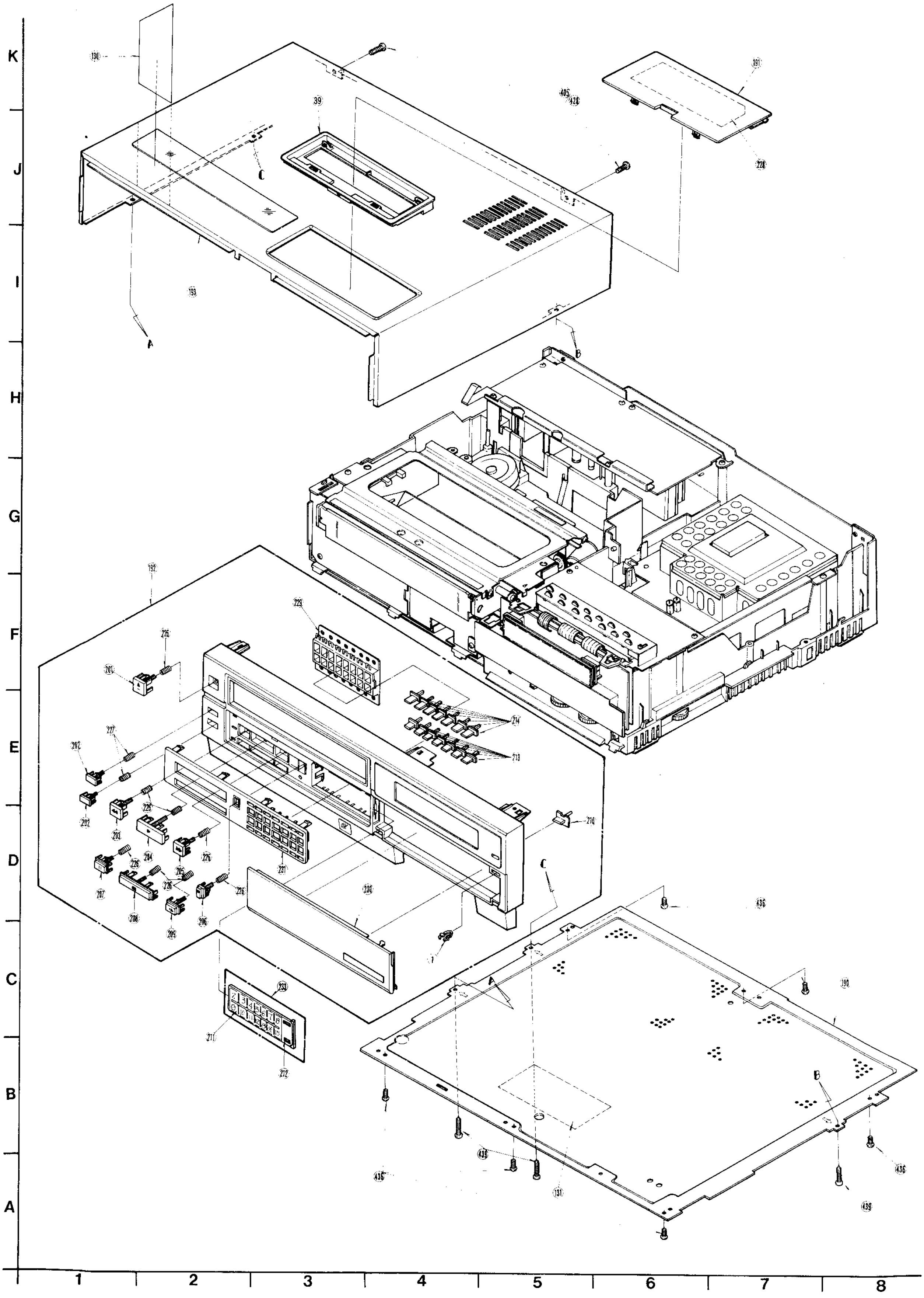
❺ Chassis Frame & Tuner Parts Section

(PV-1530)

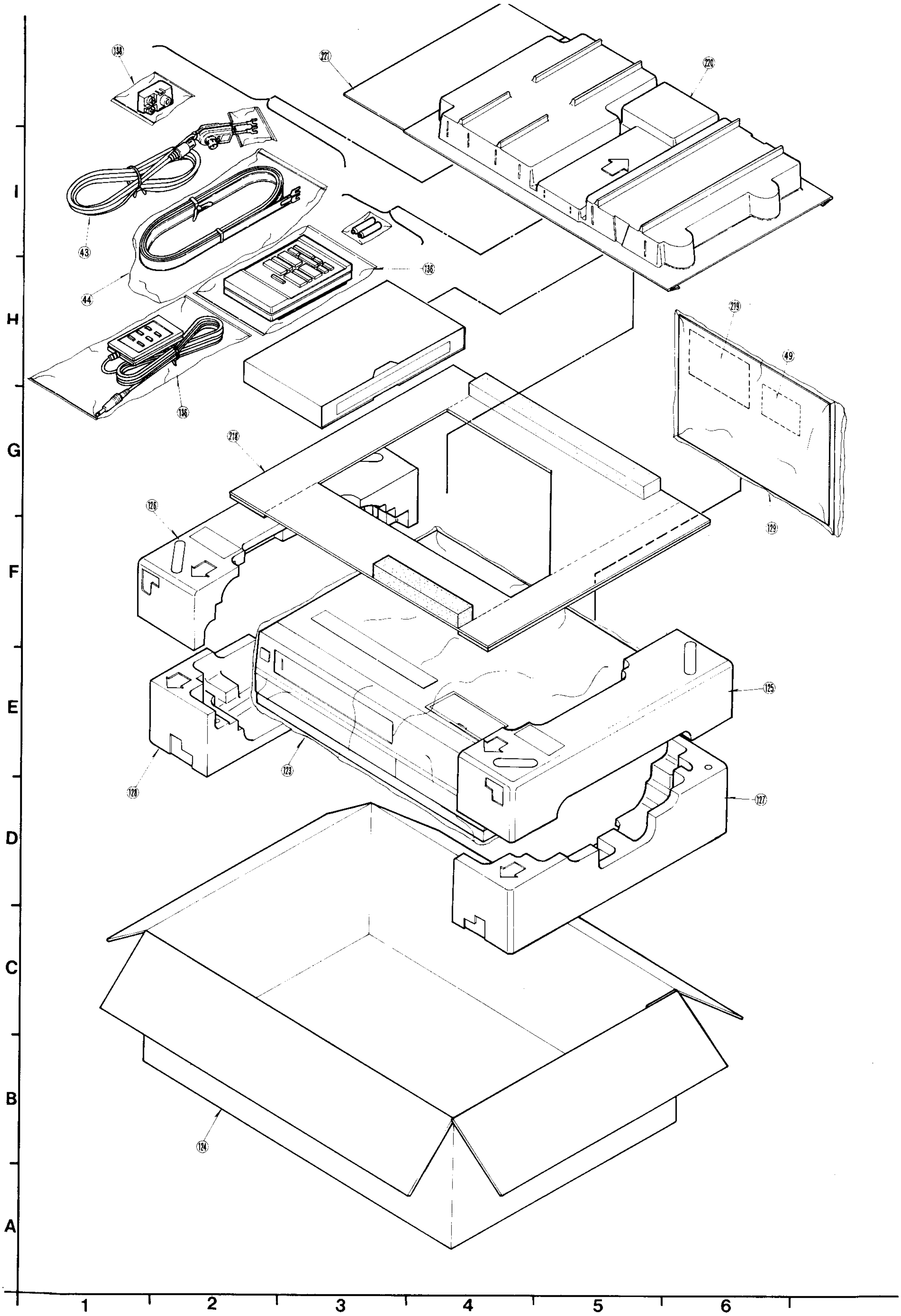
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,USE ONLY THE SPECIFIED PARTS.


K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
E LUMINANCE C.B.A.
E HEAD AMP UNIT
E CHROMINANCE C.B.A.
E RF CONVERTER
E ANT TERMINAL UNIT
E AC CORD UNIT
E BALLOON CORE
E VHF BLOCK
E SIGNAL PROCESS C.B.A.
E UHF/VHF TUNER
E TV DEMODULATOR UNIT
E POWER SUPPLY C.B.A.
E OPERATION C.B.A.
E AUDIO C.B.A.
E CHANNEL SELECT C.B.A.
E PROGRAMMABLE TIMER C.B.A.
E FUSE CAUTION LABEL
E SERVO/SUB AUDIO /SYSTEM CONTROL C.B.A.
⚠
A
A
B
C
D
E
F
G
H
234
437
437
437
437
440
441
443
443
443
447
63
137
241
47
61
161
235
240
424
444
62
135
413
67
403
483
198
196
197
32
132
64
242
404
445
232
216
157
215
59
161
133
48
48
40
40
441
46
437
437
37
65

6 Casing Parts Section


K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
130
39
405
428
191
228
C
193
A
B
192
229
226
201
227
202
214
213
202
203
225
204
225
210
226
205
231
207
226
226
C
230
208
209
206
7
233
211
212
436
190
A
B
436
439
131
436
439

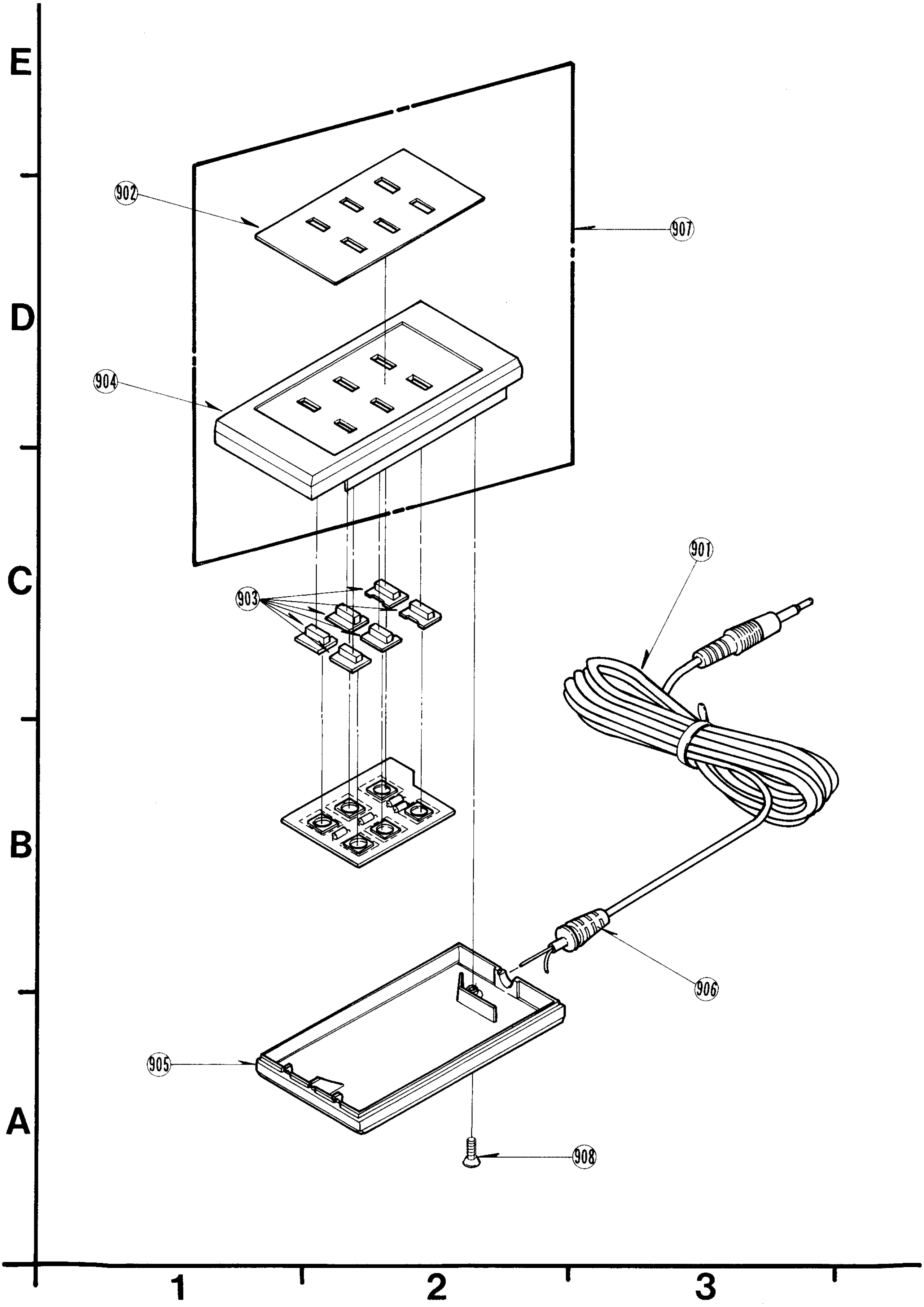
❼ *Packing Parts & Accessories Section*



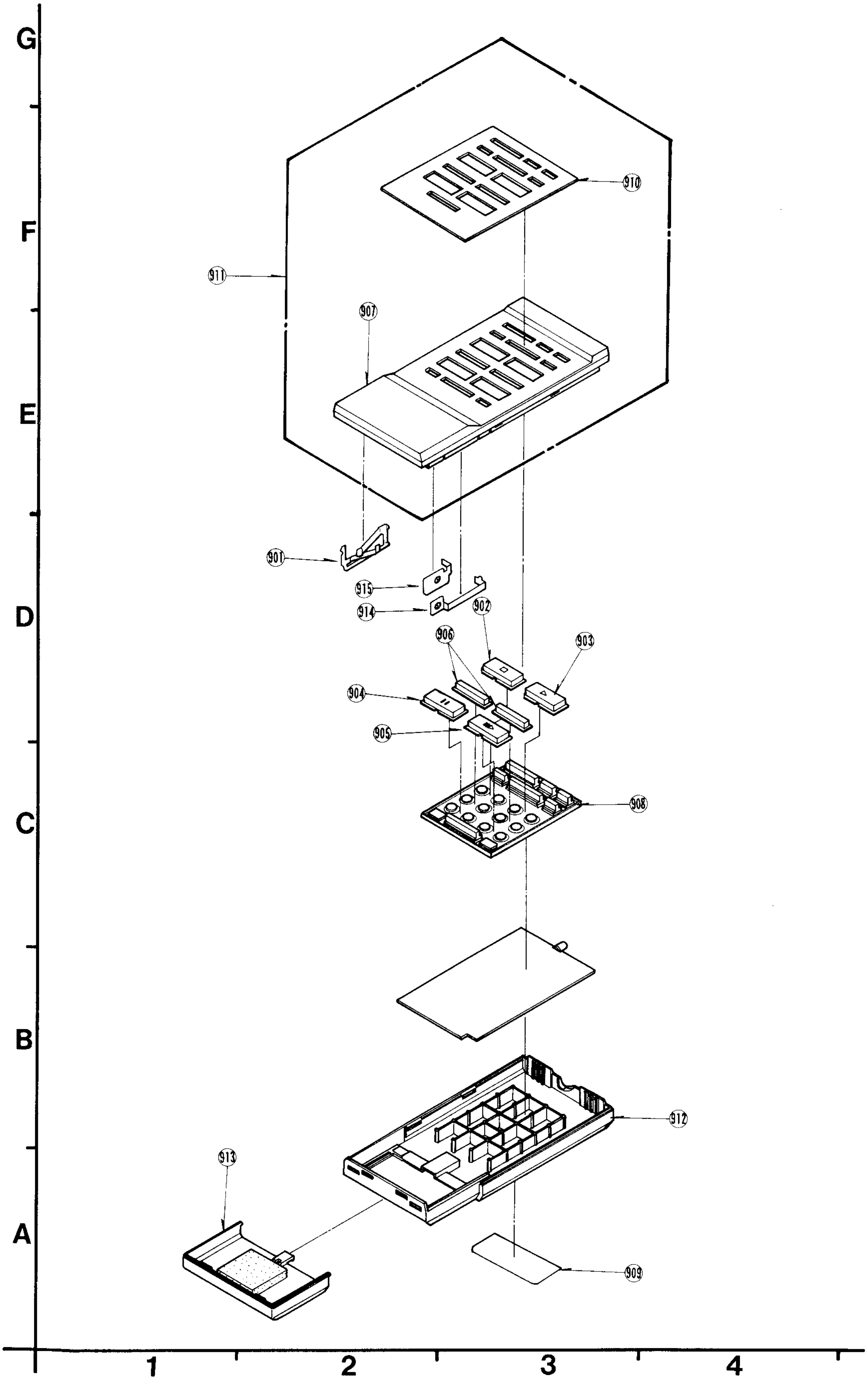
138
221
220
43
44
136
136
219
49
218
126
129
125
123
128
127
124
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6

❽ *Wired Transmitter Unit Section*

(PV-1525)


E
D
C
B
A
1
2
3
902
907
904
901
903
906
905
908

❾ *IR Wireless Transmitter Unit Section* (PV-1530)


G
F
E
D
C
B
A
1
2
3
4
910
911
907
901
915
914
902
906
903
904
905
908
912
913
909

MECHANICAL REPLACEMENT PARTS LIST

Model No. PV-1525 /PV-1530

Note: Be sure to make your orders of replacement parts according to this list.
(A)=PV-1525,(B)=PV-1530

Item No.	Drawing No.	Description	Pcs/ Set	Part No.	Remark
1	6	DOOR CLAMPER	1	TKK769906	
2	1	FASTENER	1	TYB-23M	
3	1	ERASE HEAD	1	VBS0027	
4	2	INTERMEDIATE GEAR -1	1	VDGS0038	
5	2	DRIVING GEAR	1	VDGS0039	
6	3	INTERMEDIATE GEAR -2	1	VDGS0040	
7	2	LOADING CAM GEAR	1	VDGS0041	
8	2	CHANGE GEAR	1	VDGS0042	
9	1	IDLER GEAR	1	VDGS0043	
10	1	INTERMEDIATE GEAR -A	1	VDGS0044	
11	3	PULLEY GEAR	1	VDGS0045	
12	1	INTERMEDIATE GEAR -B	1	VDGS0046	
13	2	KICK GEAR -1	1	VDGS0048	
14	2	RELEASE GEAR	1	VDGS0049	
15	2	KICK GEAR -2	1	VDGS0050	
16	4	WORM	1	VDGS0051	
17	4	MAIN SHAFT GEAR -R	1	VDGS0054	
18	1	CLUTCH PULLEY	1	VDPS0083	
19	4	WORM PULLEY	1	VDPS0088	
20	1	SUPPLY ROLLER	1	VDPS0091	
21	3	CAPSTAN BELT	1	VDVS0042	
22	3	LOADING BELT	1	VDVS0043	
23	4	LOADING BELT	1	VDVS0044	
24	1	D.D CYLINDER UNIT	1	VEGS0057	
25	3	F.G HEAD UNIT	1	VEHS0068	
				OR VEHS0069	
26	1	A/C HEAD UNIT	1	VEHS0088	(A)
26	1		1	VEHS0074	(B)
27	1	UPPER CYLINDER UNIT	1	VEHS0077	
28	1	LUG ASS'Y	1	VEKS1794	
29	4	CASSETTE LOADING MOTOR UNIT	1	VEMS0088	
30	3	CAPSTAN STATER UNIT	1	VEMS0089	
31	3	LOADING MOTOR UNIT	1	VEMS0086	(A)
31	3		1	VEMS0085	(B)
32	5	IR WIRELESS RECEIVING DETECTOR	1	VEQS0285	(B)
		UNIT		OR VEQS0293	
33					
34	2	MODE SELECT SWITCH	1	VESS0016	
35					
36					
37	5	TRACKING V.R PANEL	1	VGPS0716	(A)
37	5		1	VGPS0749	(B)
38	4	BLIND PANEL	1	VGPS0682	
39	6	TUNING DOOR DECORATION	1	VGPS0717	(A)
39	6		1	VGPS0823	(B)
40	5	TRACKING KNOB	3	VGTS0135	
41					
42					
43	7	VHF CONNECTING CABLE	1	VSQS0215	
44	7	TWIN LEAD CONNECTOR	1	VJA0102	
45					
46	5	TRACKING PANEL	1	VJJS0066	(A)
46	5		1	VJJS0067	(B)
47	3,5	CLAMPER	2	VJR3	
48	5	HINGE	3	VKCS0009	
49	7	V -HOLD ADJ. TOOL	1	VXKS0365	
50	1	SHAFT HOLDER PLATE	2	VMAS0545	
51	3	TENSION REGULATOR PLATE	1	VMAS0875	
52	3	TENSION ANGLE	1	VMAS0876	
53	3	LOADING MOTOR BRACKET	1	VMAS0877	
54	2	GROUNDING PLATE	1	VMAS0883	
55	4	CASSETTE HOLDER	1	VMAS0898	
56					
57	4	CASSETTE COMPARTMENT TOP PLATE	1	VXAS0676	
58	4	SWITCH BRACKET	1	VMAS0906	
59	5	TOP COVER ANGLE -R	1	VMAS0932	
60					
61	5	TOP COVER SUPPORT ANGLE	1	VMAS0951	
62	5	P.B ANGLE	1	VMAS0952	
63	5	SIGNAL PROCESS C.B.A ANGLE	1	VMAS0953	
64	5	FRONT FRAME SUPPORT ANGLE	1	VMAS0954	
65	5	GROUNDING ANGLE	1	VMAS0955	
66	4	WORM WHEEL STOPPER	1	VMAS0986	
67	5	AUDIO C.B.A ANGLE	1	VMAS1007	(B)
68	4	CASSETTE HOLDER SPRING -L	1	VMAS0964	
69	4	CASSETTE HOLDER SPRING -R	1	VMAS0965	
70	1	SUPPLY INERTIA SPRING	1	VMBS0071	
71	1	POST SPRING -P,4	1	VMBS0288	
72	2	KICK SPRING	1	VMBS0330	
73	2	TENSION SPRING	1	VMBS0331	
74	4	SOFT BRAKE SPRING	1	VMBS0332	
75	2	SELECT GEAR LEVER SPRING	1	VMBS0333	
76	2	PRESSURE ROLLER SPRING	1	VMBS0334	
77	2	KICK LEVER SPRING	1	VMBS0336	
78	2	SUB LEVER SPRING	1	VMBS0337	
79	1	IDLER ARM SPRING	1	VMBS0339	
80	1	ADJUST SPRING	1	VMBS0425	
81	1	SOFT BRAKE SPRING -S	1	VMBS0341	
82	1	A/C HEAD SPRING	1	VMBS0342	
83	4	CASSETTE HOLDER GUIDE SPRING	2	VMBS0345	
84	4	WIPER GEAR SPRING	1	VMBS0348	
85	4	WIPER SPRING -L	1	VMBS0349	
86	4	BLIND SPRING	1	VMBS0350	
87	1	IDLER SPRING	1	VMBS0355	
88					
89	1	ERASE HEAD LEVER SPRING	1	VMBS0373	
90					
91	2	BRAKE ARM SPRING	1	VMBS0661	
92	1	ADJUST SPRING	1	VMB0404	
93	1	LOADING SPRING	2	VMB0669	
94	1	POST STOPPER	1	VMDS0031	
95	1	INERTIA ROLLER LIMITER	1	VMDS0063	
96	1	POST STOPPER	1	VMDS0199	
97	4	CASSETTE HOLDER GUIDE -R	1	VMDS0203	
98	4	CASSETTE HOLDER GUIDE -L	1	VMDS0204	
99	4	SLIDE -R	1	VMDS0205	
100	4	SLIDE -L	1	VMDS0206	
101	4	SIDE PLATE -L	1	VMDS0208	
102	4	SWITCH CAM	1	VMDS0209	
103	4	SWITCH PIECE	1	VMDS0236	
104	2	SUB LEVER CUSHION	1	VMDS0249	
105	3	OIL POOL	1	VMD0104	
106					

Item No.	Drawing No.	Description	Pcs/ Set	Part No.	Remark
107	1	IDLER ARM -A	1	VMLS0303	
108	1	CHANGE LEVER -B	1	VMLS0305	
109	1	SOFT BRAKE ARM -S	1	VMLS0306	
110	4	WIPER GEAR -R	1	VMLS0320	
111	4	WIPER GEAR -L	1	VMLS0321	
112	4	CASSETTE COMPARTMENT OPENER	1	VMLS0322	
		LEVER			
113	1	ERASE HEAD LEVER	1	VMLS0350	
114	1	LEVER SHAFT	1	VMSS0381	
115	4	WORM SHAFT	1	VMSS0394	
116	1	COLLAR	1	VMXS0035	
117	1	POST CAP -P.4	1	VMXS0129	
118	1	LIMITER SUPPORTER	1	VMXS0321	
119	1	SLEEVE	1	VMXS0370	
				OR VMXS0372	
120	3	THRUST SCREW	1	VMX0211	
121	3	OIL SEAL	1	VMX0251	
122	1	INERTIA ROLLER UPPER LIMITER	1	VNWS0002	
123	7	POLYETHYLENE BAG	1	VPFS0029	
124	7	PACKING CASE	1	VPGS0908	(A)
124	7		1	VPGS0916	(B)
125	7	RIGHT CUSHION -TOP	1	VPNS0157	
126	7	LEFT CUSHION -TOP	1	VPNS0158	
127	7	RIGHT CUSHION -BOTTOM	1	VPNS0159	
128	7	LEFT CUSHION -BOTTOM	1	VPNS0160	
129	7	FAN BAG	1	VQFS0633	(A)
129	7		1	VQFS0646	(B)
130	6	STICKER	1	VQLS1013	(A)
130	6		1	VQLS1023	(B)
131	6	BOTTOM CAUTION LABEL	1	VQLS1058	(A)
131	6		1	VQLS1051	(B)
132	5	GROUNDING PLATE	1	VSCS0476	(B)
133	5	GROUNDING ANGLE	1	VSCS0477	
134	1	SHIELD CASE	1	VSCS0514	
135	5	GROUNDING PLATE	1	VSCS0528	
136	7	WIRED TRANSMITTER UNIT	1	VSQS0314	(A)
136	7	IR WIRELESS TRANSMITTER UNIT	1	VSQS0262	(B)
137	5	TV DEMODULATOR UNIT SUPPORT	1	VMAS1035	
		ANGLE			
138	7	VHF ANTENNA ADAPTOR	1	VSQ0057	
139	1	ROLLER POST UNIT	2	VXAS0344	
				OR VXAS0562	
140	1	LOADING BASE 1 UNIT	1	VXAS0564	
141	1	SHAFT HOLDER BLOCK S UNIT	1	VXAS0565	
142	1	LOADING POST S UNIT	1	VXAS0566	
143	1	SHAFT HOLDER BLOCK T UNIT	1	VXAS0567	
144	1	LOADING POST T UNIT	1	VXAS0568	
145	2	MAIN LEVER UNIT	1	VXAS0570	
146	2	SUB LEVER UNIT	1	VXAS0572	
147	2	KICK BASE UNIT	1	VXAS0580	
148	4	CASSETTE HOLDER GUIDE R UNIT	1	VXAS0608	
149	4	CASSETTE HOLDER GUIDE L UNIT	1	VXAS0609	
150	4	CASSETTE HOLDER UNIT	1	VXAS0611	
151	4	CASSETTE GUIDE 1 UNIT	1	VXAS0614	
152	4	CASSETTE UP UNIT	1	VXAS0685	(A)
152	4		1	VXAS0686	(B)
153	4	SIDE PLATE -R	1	VXAS0620	
154	4	SWITCH ANGLE UNIT	1	VXAS0625	
155	1	CASSETTE OPENER ANGLE UNIT	1	VXAS0648	
156					

Item No.	Drawing No.	Description	Pcs/ Set	Part No.	Remark
157	5	TIMER BUTTON -A	1	VGUS0974	(B)
158	1	GROUNDING PLATE	1	VXBS0019	
159	3	HOUSING	1	VXDS0012	
160	4	RELEASE LEVER	1	VMLS0357	
161	5	CUSHION	2	VXGS0006	
162	1	F.F SLIDE LEVER UNIT	1	VXKS0339	
163	1	LOADING ARM R UNIT	1	VXLS0200	
164	1	LOADING ARM L UNIT	1	VXLS0201	
165	1	CHANGE LEVER -A	1	VXLS0267	
166	1	IDLER ARM -B	1	VXLS0268	
167	2	ARM LEVER	1	VXLS0271	
168	2	ARM LEVER UNIT	1	VXLS0272	
169	2	SECTOR GEAR UNIT	1	VXLS0273	
170	2	TENSION ARM UNIT	1	VXLS0276	
171	4	CASSETTE OPENER LEVER	1	VXLS0295	
172	4	WIPER GEAR R UNIT	1	VXLS0296	
173	4	WIPER GEAR L UNIT	1	VXLS0297	
174	2	PRESSURE ROLLER LEVER UNIT	1	VXLS0310	
175	1	IDLER FRAME UNIT	1	VXPS0116	
176	3	CAPSTAN ROTOR UNIT	1	VXPS0119	
177	1	LOADING GEAR UNIT	2	VXPS0120	
178	2	KICK GEAR UNIT	1	VXPS0121	
179	3	CAPSTAN PULLEY UNIT	1	VXPS0122	
180	1	CLUTCH GEAR UNIT	1	VXPS0124	
				OR VXPS0134	
181	4	WORM WHEEL UNIT	1	VXPS0128	
182	4	MAIN SHAFT	1	VXPS0129	
183	2	SUPPLY REEL TABLE UNIT	1	VXRS0016	
184	2	TAKEUP REEL TABLE UNIT	1	VXRS0017	
185					
186	2	BRAKE S UNIT	1	VXZS0055	
187	2	BRAKE T UNIT	1	VXZS0057	
188	2	TENSION BAND UNIT	1	VXZS0059	
189	4	SOFT BRAKE T UNIT	1	VXZS0062	
190	6	BOTTOM PANEL UNIT	1	VYFS0055	(A)
190	6		1	VYFS0057	(B)
191	6	TUNING DOOR UNIT	1	VYPS1930	(A)
191	6		1	VYPS2135	(B)
192	6	FRONT PANEL 1 UNIT	1	VYPS2090	(A)
192	6		1	VYPS2092	(B)
193	6	TOP COVER UNIT	1	VYPS2141	(A)
193	6		1	VYPS2143	(B)
194	1,3,4	CLAMPER	10	VZFS0006	
195	1	RETAINING RING C-TYPE 4	4	XUEV4FP	
196	5	FILTER PLATE	1	VGQS0294	(B)
197	5	SHIELD CASE	1	VSCS0309	(B)
198	5	SHIELD CASE	1	VSCS0310	(B)
199	4	CASSETTE ANGLE -R	1	VMAS0907	
200	4	CASSETTE ANGLE -L	1	VMAS0908	
201	6	OPERATION BUTTON -EJECT	1	VGUS0689	
202	6	OPERATION BUTTON -POWER	2	VGUS0690	
203	6	OPERATION BUTTON -REWIND	1	VGUS0691	
204	6	OPERATION BUTTON -PLAY	1	VGUS0692	
205	6	OPERATION BUTTON -F.F	1	VGUS0693	
206	6	OPERATION BUTTON -PLAY	1	VGUS0694	
207	6	OPERATION BUTTON -PAUSE	1	VGUS0695	
208	6	OPERATION BUTTON -STOP	1	VGUS0696	
209	6	OPERATION BUTTON -SLOW	1	VGUS0697	
210	6	COUNTER RESET BUTTON	1	VGUS0698	

Item No.	Drawing No.	Description	Pcs/ Set	Part No.	Remark
211	6	VHF CHANNEL FILM	1	VGKS0550	
212	6	FILM HOLDER	1	VGQS0242	
213	6	CHANNEL SELECT BUTTON -A	7	VGUS0742	
214	6	CHANNEL SELECT BUTTON -B	7	VGUS0743	
215	5	TIMER BUTTON	1	VGUS0699	
216	5	TIMER BUTTON -B	2	VGUS0864	
217	2	KICK LEVER 1 UNIT	1	VXLS0275	
218	7	TOP PAD	1	VPGS1051	
219	7	UHF CHANNEL FILM	1	VGKS0683	
220	7	ACCESSORY CASE	1	VPGS0379	
221	7	ACCESSORY CASE PAD	1	VPGS0380	
222	4	RELEASE SPRING	1	VMBS0418	
223	3	CLAMPER	2	PEC-034-0	
224	2	P5 ARM UNIT	1	VXLS0302	
225	2	P5 IDLER LEVER	1	VMLS0358	
226	6	OPERATION BUTTON SPRING	8	VMBS0256	
227	6	OPERATION BUTTON SPRING	2	VMBS0371	
228	6	TUNING CAUTION LABEL	1	VQLS0891	
229	6	OPERATION BUTTON PANEL -B	1	VYPS1876	
230	6	TIMER DOOR UNIT	1	VYPS2095	(A)
230	6		1	VYPS2096	(B)
231	6	OPERATION PANEL	1	VYPS2098	(A)
231	6		1	VYPS2100	(B)
232	5	TIMER BRACKET UNIT	1	VYPS2292	(A)
232	5		1	VYPS2293	(B)
233	6	FILM HOLDER UNIT	1	VYQS0027	
234	5	GROUNDING ANGLE	1	VMAS1051	
235	5	CUSHION	1	VMGS0054	
236					
237					
238					
239					
240					
241	5	CUSHION	1	VMGS0036	
242	5	CLAMPER	1	KEX-004	
243	5	CUSHION	1	VMGS0055	
401					
402					
403	5	TUNING V.R CASE DECORATION	1	VGNS0794	
404	5	SLIDE SWITCH KNOB -B	1	VGTS0118	
405	6	SCREW	2	VHDS0011	
406	1	SCREW	3	VHDS0016	
407	1	LOCK SCREW	2	VHDS0024	
				OR VHDS0052	
408	1	SCREW WITH WASHER	2	VHDS0032	
409	1	ADJUST SCREW	1	VHDS0041	
410	1	SCREW	1	VHDS0045	
411	1	SCREW	1	VHDS0057	
412	4	SCREW	2	VHDS0061	
413	5	SCREW	1	VHDS0062	
414	1	ADJUST NUT -3	1	VHNS0019	
				OR VHNS0023	
415	1	IDLER ANGLE	1	VMAS0872	
416	1	CHANNEL LEVER SPRING	1	VMBS0424	
417	2	SLIDE WASHER	3	VMXS0050	

Item No.	Drawing No.	Description	Pcs/ Set	Part No.	Remark
418	4	WASHER	2	VMXS0098	
419	2	SLIDE WASHER F	3	VMXS0109	
420	2	WASHER	1	VMXS0335	•
421	1,2	CUT WASHER	7	VMXS0336 *	
422	2	CUT WASHER	1	VMXS0342 *	
423	3	CAPSTAN THRUST WASHER	1	VMX0265	
424	5	M3 NUT	1	XNG3	
425	1	M3 NUT	2	XNG3E	
426	1	M3 NUT	1	XNG3EZU	
427	1	WASHER 5	1	XNG5E	
428	6	BIND SCREW 4X12	2	XSB4+12KS	
429	4	TAPPING SCREW 2.6X6	2	XTN26+6	
430					
431	1	SCREW	1	VHDS0068	
				OR XSN3D10F	
432	5	TAPPING SCREW 3X10	1	XTN3+10FUS	
433	1	TAPPING SCREW 2.6X6	1	XTV26+6F	
434	4	TAPPING SCREW 2.6X6	2	XTV26+6G	
435	5	TAPPING SCREW 3X10	2	XTV3+10AR	
436	6	TAPPING SCREW 3X12	6	XTV3+12AK	
437	5	TAPPING SCREW 3X12	10	XTV3+12AR	(A)
437	5		12	XTV3+12AR	(B)
438	3	TAPPING SCREW 3X15	1	XTV3+15F	
439	6	TAPPING SCREW 3X25	3	XTV3+25AK	
440	5	TAPPING SCREW 3X8	8	XTV3+8B	
441	5	TAPPING SCREW 3X6	1	XTV3+6	
442	1,4	TAPPING SCREW 3X6	2	XTV3+6F	
443	5	TAPPING SCREW 3X8	5	XTV3+8	
444	5	TAPPING SCREW 3X8	2	XTV3+8AR	
445					
446	1,2,3,4	TAPPING SCREW 3X8	29	XTV3+8F	
447	4,5	TAPPING SCREW 3X6	6	XTV3+6FRS	
448	4	TAPPING SCREW 3X8	4	XTV3+8G	
449	4	TAPPING SCREW 2.6X8	4	XTW26+8P	
450	1	RETAINING RING E-TYPE 1.5	2	XUC15FP	
451	1,2	RETAINING RING E-TYPE 2.5	4	XUC25FP	
452	2,3	RETAINING RING C-TYPE 3	8	XUEV3VW	
453	1,2,4	RETAINING RING C-TYPE 4	12	XUEV4VW	
454	1	POLY SLIDER WASHER 2	1	XWGV2D5G	
455	1	POLY SLIDER WASHER 3	1	XWGV3D12G	
456	1,2	POLY SLIDER WASHER 3	4	XWGV3D54G	
457	1	WASHER 5	1	XWG5J12	
458	2	POLY SLIDER WASHER 3	1	XWXV3A54	(t=0.25)
459	2	POLY SLIDER WASHER 3	1	XWXV3A8	(t=0.25)
460	1,2,3	POLY SLIDER WASHER 3	11	XWXV3D54	(t=0.5)
461	2	POLY SLIDER WASHER 3	1	XWXV3D8	(t=0.5)
462	2	POLY SLIDER WASHER 3	1	XWXV3Z54	(t=0.13)
463	2	POLY SLIDER WASHER 3	1	XWXV3Z8	(t=0.13)
464	3	POLY SLIDER WASHER 3	1	XWXV35D6	
465	2	POLY SLIDER WASHER 4	2	XWXV4D11	
466	1,2	POLY SLIDER WASHER 4	6	XWXV4D9	
467	1	SCREW WITH WASHER 2.6X8	1	XYC26+CJ8	
468	3	SCREW WITH WASHER 3X8	2	XYC3+FF8	
469	4	SCREW WITH WASHER 2.6X8	1	XYE26+FJ8	
470	2	SCREW WITH WASHER 3X10	2	XYE3+FF10	
471	2	SCREW WITH WASHER 3X8	1	XYE3+FF8	
472	1	SCREW WITH WASHER 3X8	1	XYNV3+K8	
473	4	SCREW WITH WASHER 2X10	2	XYN2+F10	
474	3	SCREW WITH WASHER 2.6X33	2	XYN26+C33	

* This cut washer is not reuseable. If removed, reinstall a new one.

Item No.	Drawing No.	Description	Pcs/ Set	Part No.	Remark
475	1	SCREW WITH WASHER 3X4	2	XYN3+C4	
476	1	SCREW WITH WASHER 3X12	2	XYN3+F12	
477	1	SCREW WITH WASHER 3X16	2	XYN3+F16	
				OR XYN3+F18	
478	2,3	SCREW WITH WASHER 3X8	2	XYN3+F8	
479	2	POLY SLIDER WASHER 3	1	XWXV3D65	
				OR XWXV3D7	
480	2	M3 NUT	1	VHD0045	
				OR VHNS0015	
481	2	POLY SLIDER WASHER 6	1	XWXV6F9	
482	1	CUT WASHER	1	VMXS0376	
				OR XTV3+5F	
483	5	GROUNDING PLATE	1	VSCS0408	
		(PV-1525)			
901	8	REMOTE CONTROL CABLE	1	VECS0120	
902	8	REMOTE CONTROL CASE DECORATION	1	VGKS0712	
903	8	REMOTE CONTROL BUTTON	6	VGUS0948	
904	8	REMOTE CONTROL CASE -BOTTOM	1	VKMS0113	
905	8	REMOTE CONTROL CASE -TOP	1	VKMS0066	
906	8	BUSHING	1	VVRS0017	
907	8	REMOTE CONTROL CASE TOP UNIT	1	VYBS0140	
908	8	TAPPING SCREW 2.6X10	1	XTS26+10BFZ	
		(PV-1530)			
901	9	ELECTRODE PLATE -COMMON	1	UR52TD101	
902	9	OPERATION BUTTON -STOP	1	UR56BT76	
903	9	OPERATION BUTTON -PLAY	1	UR56BT77	
904	9	OPERATION BUTTON	1	UR56BT78	
		-PAUSE/STILL			
905	9	OPERATION BUTTON -FADV	1	UR56BT79	
906	9	OPERATION BUTTON -FF/REWIND	2	UR56BT80	
907	9	TOP CASE	1	UR56CS69	
908	9	RUBBER PLATE FOR CONTACT	1	UR56CT72A	
909	9	PART NO PLATE	1	UR56LB86	
910	9	TOP CASE DECORATION	1	UR56PP81	
911	9	TOP CASE UNIT	1	UR56VCS38	
912	9	BOTTOM CASE UNIT	1	UR56VCS39	
913	9	BATTERY COVER UNIT	1	UR56VEC37	
914	9	ELECTRODE PLATE -POSITIVE	1	UR57TD74	
915	9	ELECTRODE PLATE -NEGATIVE	1	UR57TD75	
		SERVICING FIXTURES & TOOLS			
		VHS ALIGNMENT TAPE		VFMS0001H6	
		DIAL TORQUE GAUGE		VFK0133	
		PLASTIC CLAMPER		VFK0180	
		ADAPTOR FOR VFK0133		VFK0134	
		FINE ADJ. SCREWDRIVER		VFK0136	
		(for 3mmφ Long Shaft)			
		POST ADJ. SCREWDRIVER		VFK0137	

Item No.	Drawing No.	Description	Pcs/ Set	Part No.	Remark
		POST ADJ. PLATE		VFKS0010	
		REEL TABLE HEIGHT FIXTURE		VFKS0009	
		TENSION POST ADJ. PLATE		VFKS0002	
		H-POSITION ADJ. FIXTURE		VFKS0003	
		V - HOLD ADJ. TOOL		VFKS0031	
		CASSETTE HOLDER FIXTURE		VFKS0004	
		V-STOPPER ADJ. FIXTURE		VFKS0029	
		RETAINING RING REMOVER		VFK0144	
		(for 3mmφ)			
		RETAINING RING REMOVER		VFK0145	
		(for 4mmφ)			
		HEAD CLEANING STICK		VFK27	
		MOLYTONE GREASE		MOR265	
		LOCK SCREW WRENCH		VFKS0032	

ELECTRICAL REPLACEMENT PARTS LIST

Model No. PV-1525 /PV-1530

Special Note:

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "Electrostatically Sensitive (ES) Devices" section of this service manual.

Note:

1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. Unless otherwise specified;
   All resistors are in OHMS (Ω), 1/4W, ±5%, carbon, K=1,000Ω, M=1,000KΩ.
   All capacitors are in MICROFARADS (UF), P=UUF, ±10%.
   All coils are in MICROHENRIES (UH), M=10^3U, ±10%.
4. C.B.A: Circuit Board Assembly.
5. P.C.B: Print Circuit Board.
   (A)=PV-1525,(B)=PV-1530

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
			PRINTED CIRCUIT BOARD ASSEMBLY		
		VEPS0250H1	SERVO/AUDIO/SYSTEM CONTROL	1	(A)
			C.B.A		
		VEPS0249B1	SERVO/SUB AUDIO/SYSTEM CONTROL	1	(B)
			C.B.A		
		VEPS0344B2	SIGNAL PROCESS C.B.A	1	(A)
		VEPS0344B1		1	(B)
		VEPS0135F1	POWER SUPPLY C.B.A	1	(A)
		VEPS0135E2		1	(B)
		VEPS0422A1	AUDIO C.B.A	1	(B)
		VEPS06110A1	OPERATION C.B.A	1	
		VEPS07100C1	CHANNEL SELECT C.B.A	1	
		VEPS07123A1	PROGRAMMABLE TIMER C.B.A	1	(A)
		VEPS07123E1		1	(B)
		VEPS0243C1	CAPSTAN MOTOR DRIVE C.B.A	1	
		VEPS0508A1	HEAD AMP UNIT	1	
		VEPS0337A	LUMINANCE C.B.A	1	
		VEPS0806A	CHROMINANCE C.B.A	1	
		VEQS0257	TV DEMODULATOR UNIT	1	
			SERVO/AUDIO/SYSTEM CONTROL		(A)
			C.B.A		
			INTEGRATED CIRCUITS		
IC2001		AN6359		1	
		OR AN6359N			
IC2002		MN6168VIB		1	
IC2003		AN6356N		1	
IC2004		AN6387		1	
IC2005		UPD6110CA		1	
IC2006,2007		AN1358		2	
		OR AN6562			
		OR HA17358			
		OR UPC1358C			
IC4001		UPC1520CA		1	
IC4002		TA7361P		1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
IC4701		AN6558		1	
		OR BA4558			
IC6001		MN15846VRC		1	
IC6002		AN6914		1	
		OR HA17393			
		OR UPC393			
IC6004,6005		BA6209U		2	
			TRANSISTORS		
Q2001,2002		2SA937M(R)		2	
		OR			
		2SD641(Q,R,S)			
Q2003,2004		2SC2021M(R)		2	
		OR			
		2SD636(Q,R,S)			
Q2005,2006		2SA937M(R)		2	
		OR			
		2SD641(Q,R,S)			
Q2007-2011		2SC2021M(R)		5	
		OR			
		2SD636(Q,R,S)			
Q2012		2SA937M(R)		1	
		OR			
		2SD641(Q,R,S)			
Q2013		2SD1266		1	
		OR 2SD856			
Q2014		2SA937M(R)		1	
		OR			
		2SD641(Q,R,S)			
Q2015		2SC2021M(R)		1	
		OR			
		2SD636(Q,R,S)			
Q3201,3202		2SC2021M(Q,R)		2	
		OR 2SD636(Q,R)			
Q4001		2SD636(Q,R,S)		1	
Q4002		2SB641(Q,R,S)		1	
Q4003		2SD637(Q,R,S)		1	
Q4004		2SD636(Q,R,S)		1	
Q4006,4007		DTC143A		2	
Q4701		2SD636(Q,R,S)		1	
Q4702		2SB641(Q,R,S)		1	
Q4703		2SD655(E,F)		1	
		OR 2SD661(S,T)			
Q6003-6005		2SC2021M(R)		3	
		OR			
		2SD636(Q,R,S)			
Q6006		2SD638(Q,R,S)		1	
Q6007		2SC2021M(R)		1	
		OR			
		2SD636(Q,R,S)			
Q6010-6012		2SA937M(R)		3	
		OR			
		2SB641(Q,R,S)			
Q6014		2SC2021M(R)		1	
		OR			
		2SD636(Q,R,S)			
Q6020		2SC2021M(R)		1	
		OR			
		2SD636(Q,R,S)			
Q6021		2SA937M(R)		1	
		OR			
		2SB641(Q,R,S)			
Q6199		2SC2021M(R)		1	
		OR			
		2SD636(Q,R,S)			

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
			DIODES		
D2001-2007		MA165		7	
		OR 1SS119			
D2009-2019		MA165		11	
		OR 1SS119			
D2024,2025		MA165		2	
		OR 1SS119			
D3201-3204		EQA02-13	ZENER	4	
		OR MA4130	ZENER		
		OR RD13EB	ZENER		
D4701		MA165		1	
D4702		MA4130	ZENER	1	
D6006-6023		MA165		18	
		OR 1SS119			
D6027		MA165		1	
		OR 1SS119			
D6030-6039		MA165		10	
		OR 1SS119			
D6041		MA165		1	
		OR 1SS119			
D6199		MA165		1	
		OR 1SS119			
			RESISTORS		
RX6001		EXPBP84223K	COMPLEX COMPONENT 22K +-10%	1	
R2001		ERDS2TJ223	22K	1	
R2002		ERDS2TJ334	330K	1	
R2003		ERDS2TJ272	2.7K	1	
R2004		ERDS2TJ473	47K	1	
R2006		ERDS2TJ153	15K	1	
R2007		ERDS2TJ472	4.7K	1	
R2008		ERDS2TJ153	15K	1	
R2009-2011		ERDS2TJ103	10K	3	
R2012		ERDS2TJ153	15K	1	
R2013		ERDS2TJ105	1M	1	
R2014		ERDS2TJ333	33K	1	
R2015		ERDS2TJ102	1K	1	
R2016		ERDS2TJ472	4.7K	1	
R2017		ERDS2TJ103	10K	1	
R2018,2019		ERDS2TJ332	3.3K	2	
R2020-2022		ERDS2TJ470	47	3	
R2023		EROS2TKG1801	PRECISION METAL FILM 1.8K +-2%	1	
R2024		EROS2TKG6801	PRECISION METAL FILM 6.8K +-2%	1	
R2025	⚠	ERX12ANJR56	METAL OXIDE 1/2W 0.56	1	
	⚠	OR ERX12SJR56	METAL OXIDE 1/2W 0.56		
R2026		ERDS2TJ104	100K	1	
R2027		ERDS2TJ124	120K	1	
R2028		ERDS2TJ104	100K	1	
R2029		ERDS2TJ333	33K	1	
R2030		ERDS2TJ124	120K	1	
R2031		ERDS2TJ272	2.7K	1	
R2032,2033		ERDS2TJ154	150K	2	
R2034		ERDS2TJ274	270K	1	
R2035		ERDS2TJ473	47K	1	
R2036		ERDS2TJ822	8.2K	1	
R2037		EROS2TKG6801	PRECISION METAL FILM 6.8K +-2%	1	
R2038,2039		EROS2TKG1002	PRECISION METAL FILM 10K +-2%	2	
R2040		EROS2TKG1202	PRECISION METAL FILM 12K +-2%	1	
R2041		ERDS2TJ154	150K	1	
R2042		ERDS2TJ104	100K	1	
R2043		ERDS2TJ682	6.8K	1	
R2044,2045		ERDS2TJ104	100K	2	
R2046		ERDS2TJ563	56K	1	
R2047		ERDS2TJ104	100K	1	
R2048		ERDS2TJ393	39K	1	
R2049,2050		ERDS2TJ104	100K	2	
R2051		ERDS2TJ563	56K	1	
R2052-2054		ERDS2TJ393	39K	3	
R2055		EROS2TKG1003	PRECISION METAL FILM 100K +-2%	1	
R2056		ERDS2TJ103	10K	1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
R2057		EROS2TKG1202	PRECISION METAL FILM 12K +-2%	1	
R2058		EROS2TKG1602	PRECISION METAL FILM 16K +-2%	1	
R2059		ERDS2TJ224	220K	1	
R2060		ERDS2TJ103	10K	1	
R2061		EVJFFAF15B15	VARIABLE TRACKING 100K	1	
R2064		ERDS2TJ562	5.6K	1	
R2065		ERDS2TJ104	100K	1	
R2066		EVNE4AA00B54	VARIABLE 50K	1	
R2067,2068		ERDS2TJ102	1K	2	
R2069		EVN38CA00B15	VARIABLE 100K	1	
R2070,2071		ERDS2TJ104	100K	2	
R2072		EVJFPAF15B15	VARIABLE SLOW TRACKING 100K	1	
R2073		ERDS2TJ222	2.2K	1	
R2074		ERDS2TJ181	180	1	
R2075		ERDS2TJ223	22K	1	
R2076		ERDS2TJ474	470K	1	
R2077		ERDS2TJ563	56K	1	
R2078,2079		ERDS2TJ104	100K	2	
R2080		ERDS2TJ333	33K	1	
R2081		ERDS2TJ103	10K	1	
R2082		ERDS2TJ223	22K	1	
R2083,2084		ERDS2TJ823	82K	2	
R2085		ERDS2TJ332	3.3K	1	
R2086		ERDS2TJ103	10K	1	
R2087		ERDS2TJ333	33K	1	
R2088,2089		ERDS2TJ104	100K	2	
R2090		ERDS2TJ184	180K	1	
R2091		ERDS2TJ104	100K	1	
R2092		ERDS2TJ684	680K	1	
R2093		ERDS2TJ224	220K	1	
R2094		ERDS2TJ223	22K	1	
R2096		ERDS2TJ103	10K	1	
R2097		EVN38CA00B54	VARIABLE 50K	1	
R2098		EVN38CA00B15	VARIABLE 100K	1	
R2099,2100		EVLS3MA00B15	VARIABLE 100K	2	
R2101		ERDS2TJ223	22K	1	
R2102		ERDS2TJ273	27K	1	
R2103		ERDS2TJ154	150K	1	
R2104		ERDS2TJ472	4.7K	1	
R2105,2106		ERDS2TJ103	10K	2	
R2107		ERDS2TJ473	47K	1	
R2109		ERDS2TJ822	8.2K	1	
R2114		ERDS2TJ103	10K	1	
R2121		ERDS2TJ473	47K	1	
R2122		ERDS2TJ103	10K	1	
R2124		ERDS2TJ103	10K	1	
R2125		ERDS2TJ222	2.2K	1	
R3201		ERDS2TJ122	1.2K	1	
R3202		ERDS2TJ103	10K	1	
R3203		ERDS2TJ820	82	1	
R3209		EVJFFAF15B24	VARIABLE 20K	1	
R3210		ERDS2TJ123	12K	1	
R3211		ERDS2TJ472	4.7K	1	
R4001		ERDS2TJ333	33K	1	
R4002		ERDS2TJ124	120K	1	
R4003		ERDS2TJ101	100	1	
R4004		EVNE4AA00B53	VARIABLE 5K	1	
R4005		ERDS2TJ102	1K	1	
R4007		EVNE4AA00B23	VARIABLE 2K	1	
R4008		ERDS2TJ472	4.7K	1	
R4009		ERDS2TJ563	56K	1	
R4010		ERDS2TJ332	3.3K	1	
R4011,4012		ERDS2TJ223	22K	2	
R4013		ERDS2TJ221	220	1	
R4014		ERDS2TJ182	1.8K	1	
R4015		ERDS2TJ225	2.2M	1	
R4016		ERDS2TJ183	18K	1	
R4017		ERDS2TJ223	22K	1	
R4018		ERDS2TJ470	47	1	
R4019		ERDS2TJ221	220	1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
R4020		ERDS2TJ331	330	1	
R4021		ERDS2TJ470	47	1	
R4022		ERDS2TJ182	1.8K	1	
R4023		ERDS2TJ332	3.3K	1	
R4024		ERDS2TJ562	5.6K	1	
R4025		EVN38CA00B15	VARIABLE 100K	1	
R4026		ERDS2TJ223	22K	1	
R4027		ERDS2TJ470	47	1	
R4028		ERDS2TJ103	10K	1	
R4031		ERDS2TJ102	1K	1	
R4032		ERDS2TJ560	56	1	
R4034		ERDS2TJ563	56K	1	
R4035		ERDS2TJ222	2.2K	1	
R4047		ERDS2TJ101	100	1	
R4048		ERDS2TJ561	560	1	
R4701		ERDS2TJ182	1.8K	1	
R4702,4703		ERDS2TJ103	10K	2	
R4704		ERDS2TJ105	1M	1	
R4705		ERDS2TJ101	100	1	
R4706		ERDS2TJ104	100K	1	
R4707		ERDS2TJ183	18K	1	
R4708		ERDS2TJ103	10K	1	
R4709		ERDS2TJ473	47K	1	
R4710		ERDS2TJ563	56K	1	
R4711		ERDS2TJ562	5.6K	1	
R4712		ERDS2TJ473	47K	1	
R4713		ERDS2TJ563	56K	1	
R4714		ERDS2TJ182	1.8K	1	
R4715		ERDS2TJ473	47K	1	
R4716		ERDS2TJ392	3.9K	1	
R6008,6009		ERDS2TJ223	22K	2	
R6010		ERDS2TJ472	4.7K	1	
R6011		ERDS2TJ474	470K	1	
R6012		ERDS2TJ472	4.7K	1	
R6013,6014		ERDS2TJ104	100K	2	
R6015		ERDS2TJ472	4.7K	1	
R6017		ERDS2TJ223	22K	1	
R6018		ERDS2TJ562	5.6K	1	
R6019		ERDS2TJ682	6.8K	1	
R6021		ERDS2TJ824	820K	1	
R6022		ERDS2TJ102	1K	1	
R6023		ERDS2TJ273	27K	1	
R6024		ERDS2TJ123	12K	1	
R6025		ERDS2TJ102	1K	1	
R6026		ERDS2TJ223	22K	1	
R6027		ERDS2TJ563	56K	1	
R6028		ERDS2TJ102	1K	1	
R6029,6030		ERDS2TJ152	1.5K	2	
R6031		ERDS1TJ101	1/2W 100	1	
R6032-6034		ERDS2TJ222	2.2K	3	
R6035		ERDS2TJ333	33K	1	
R6036		ERDS2TJ224	220K	1	
R6037		ERDS2TJ682	6.8K	1	
R6038		ERDS2TJ223	22K	1	
R6039-6041		ERDS2TJ682	6.8K	3	
R6042-6044		ERDS2TJ223	22K	3	
R6045		ERDS2TJ332	3.3K	1	
R6046		ERDS2TJ154	150K	1	
R6047		ERDS2TJ224	220K	1	
R6048,6049		ERDS2TJ223	22K	2	
R6050		EROS2TKG4701	PRECISION METAL FILM 4.7K +-2%	1	
R6051		ERDS2TJ393	39K	1	
R6052		ERDS2TJ392	3.9K	1	
R6053		ERDS2TJ222	2.2K	1	
R6054		ERDS2TJ392	3.9K	1	
R6055		ERDS2TJ683	68K	1	
R6056-6062		ERDS2TJ682	6.8K	7	
R6063		ERDS2TJ223	22K	1	
R6064		ERDS2TJ471	470	1	
R6065		ERDS2TJ153	15K	1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
R6066		ERDS2TJ472	4.7K	1	
R6067		ERDS2TJ152	1.5K	1	
R6068,6069		ERDS2TJ392	3.9K	2	
R6077,6078		ERDS2TJ102	1K	2	
R6079		ERDS2TJ103	10K	1	
R6080,6081		ERDS2TJ472	4.7K	2	
R6082,6083		ERDS2TJ103	10K	2	
R6084,6085		ERDS2TJ472	4.7K	2	
R6087		ERDS2TJ104	100K	1	
R6088		ERDS2TJ472	4.7K	1	
R6089		ERDS2TJ102	1K	1	
R6091		ERDS2TJ102	1K	1	
R6092		ERDS2TJ103	10K	1	
R6093,6094		ERDS2TJ102	1K	2	
R6095		ERDS2TJ472	4.7K	1	
R6096	⚠	ERDS1FJ2R7	1/2W 2.7	1	
R6097		ERDS2TJ102	1K	1	
R6098		ERDS2TJ104	100K	1	
R6099		ERDS2TJ333	33K	1	
R6103,6104		ERDS2TJ472	4.7K	2	
R6108		ERDS2TJ274	270K	1	
R6109		ERDS2TJ333	33K	1	
R6110		EROS2TKG2202	PRECISION METAL FILM 22K +-2%	1	
R6111		ERDS2TJ102	1K	1	
R6116,6117		ERDS2TJ102	1K	2	
R6120		ERDS2TJ333	33K	1	
R6121,6122		ERDS2TJ562	5.6K	2	
R6123,6124		ERDS2TJ223	22K	2	
R6126,6127		ERDS2TJ562	5.6K	2	
R6128		ERDS2TJ332	3.3K	1	
R6133		ERDS2TJ103	10K	1	
R6197		ERDS2TJ562	5.6K	1	
R6198,6199		ERDS2TJ104	100K	2	
R6201-6203		ERDS2TJ102	1K	3	
			CAPACITORS		
C2001		ECEA1HS010	ELECTROLYTIC 50V 1	1	
		OR ECEA1HU010	ELECTROLYTIC 50V 1		
C2002		VCYSARC103NX	CERAMIC 16V 0.01	1	
			+-30%		
C2003		ECEA1EN3R3S	ELECTROLYTIC 25V 3.3	1	
C2004		ECQM1H103KV	POLYESTER 50V 0.01	1	
		OR ECQM1H103KZ	POLYESTER 50V 0.01		
C2005		ECEA1CS100	ELECTROLYTIC 16V 10	1	
		OR ECEA1CU100	ELECTROLYTIC 16V 10		
C2006		ECEA1HS010	ELECTROLYTIC 50V 1	1	
		OR ECEA1HU010	ELECTROLYTIC 50V 1		
C2007		ECEA1HN010S	ELECTROLYTIC 50V 1	1	
C2008		ECEA1HS0R1	ELECTROLYTIC 50V 0.1	1	
		OR ECEA1HU0R1	ELECTROLYTIC 50V 0.1		
C2009		VCYSARC222NX	CERAMIC 16V 0.0022 +-30%	1	
C2010		VCYW1E152KX	CERAMIC 25V 0.0015	1	
C2011		ECEA1HS2R2	ELECTROLYTIC 50V 2.2	1	
		OR ECEA1HU2R2	ELECTROLYTIC 50V 2.2		
C2012		ECEA1HN2R2S	ELECTROLYTIC 50V 2.2	1	
C2013		ECEA1CS101	ELECTROLYTIC 16V 100	1	
		OR ECEA1CU101	ELECTROLYTIC 16V 100		
C2014		VCYSARC682NX	CERAMIC 16V 0.0068	1	
			+-30%		
C2015		ECEA1CS221	ELECTROLYTIC 16V 220	1	
		OR ECEA1CU221	ELECTROLYTIC 16V 220		
C2016,2017		ECEA1HN2R2S	ELECTROLYTIC 50V 2.2	2	
C2018		VCYSARH102KB	CERAMIC 50V 0.001	1	
C2019		ECEA1ES3R3	ELECTROLYTIC 25V 3.3	1	
		OR ECEA1EU3R3	ELECTROLYTIC 25V 3.3		
C2020		ECQM1H123KV	POLYESTER 50V 0.012	1	
		OR ECQM1H123KZ	POLYESTER 50V 0.012		

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
C2021		ECEA1HSR22	ELECTROLYTIC 50V 0.22	1	
		OR ECEA1HUR22	ELECTROLYTIC 50V 0.22		
C2022		ECEA1HS010	ELECTROLYTIC 50V 1	1	
		OR ECEA1HU010	ELECTROLYTIC 50V 1		
C2023		VCYSARC472NX	CERAMIC 16V 0.0047 +-30%	1	
C2024		ECQM1H102KV	POLYESTER 50V 0.001	1	
		OR ECQM1H102KZ	POLYESTER 50V 0.001		
C2025		ECQM1H562KV	POLYESTER 50V 0.0056	1	
		OR ECQM1H562KZ	POLYESTER 50V 0.0056		
C2026		ECEA1HS0R1	ELECTROLYTIC 50V 0.1	1	
		OR ECEA1HU0R1	ELECTROLYTIC 50V 0.1		
C2027		ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
		OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C2028		ECQM1H562KV	POLYESTER 50V 0.0056	1	
		OR ECQM1H562KZ	POLYESTER 50V 0.0056		
C2029		ECEA1HS0R1	ELECTROLYTIC 50V 0.1	1	
		OR ECEA1HU0R1	ELECTROLYTIC 50V 0.1		
C2030		ECQM1H562KV	POLYESTER 50V 0.0056	1	
		OR ECQM1H562KZ	POLYESTER 50V 0.0056		
C2031		ECEA0JS101	ELECTROLYTIC 6.3V 100	1	
		OR ECEA0JU101	ELECTROLYTIC 6.3V 100		
C2032		VCYSARC103NX	CERAMIC 16V 0.01	1	
			+-30%		
C2033,2034		ECEA0JS470	ELECTROLYTIC 6.3V 47	2	
		OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C2035		ECQV05104JZ	POLYESTER 50V 0.1 +-5%	1	
		OR ECQV1H104JZ	POLYESTER 50V 0.1 +-5%		
C2036		ECQM1H472JV	POLYESTER 50V 0.0047 +-5%	1	
		OR ECQM1H472JZ	POLYESTER 50V 0.0047 +-5%		
C2037		ECQV05563JZ	POLYESTER 50V 0.056 +-5%	1	
		OR ECQV1H563JZ	POLYESTER 50V 0.056 +-5%		
C2038		ECQV05124JZ	POLYESTER 50V 0.12 +-5%	1	
		OR ECQV1H124JZ	POLYESTER 50V 0.12 +-5%		
C2039		ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
		OR ECEA0JU221	ELECTROLYTIC 6.3V 220		
C2040		ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
		OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C2041		VCYSARC472NX	CERAMIC 16V 0.0047 +-30%	1	
C2042		ECQM1H333KV	POLYESTER 50V 0.033	1	
		OR ECQM1H333KZ	POLYESTER 50V 0.033		
C2043		ECQV05274JZ	POLYESTER 50V 0.27 +-5%	1	
		OR ECQV1H274JZ	POLYESTER 50V 0.27 +-5%		
C2044		ECQM1H272KV	POLYESTER 50V 0.0027	1	
		OR ECQM1H272KZ	POLYESTER 50V 0.0027		
C2045,2046		ECEA1CS100	ELECTROLYTIC 16V 10	2	
		OR ECEA1CU100	ELECTROLYTIC 16V 10		
C2047		ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
		OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C2048		VCYW1E393KX	CERAMIC 25V 0.039	1	
C2049		ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
		OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C2050		ECQM1H333KV	POLYESTER 50V 0.033	1	
		OR ECQM1H333KZ	POLYESTER 50V 0.033		
C2051		VCYSARC332NX	CERAMIC 16V 0.0033	1	
			+-30%		
C2052		VCYSARC103NX	CERAMIC 16V 0.01	1	
			+-30%		
C2053		ECQV05334JZ	POLYESTER 50V 0.33 +-5%	1	
		OR ECQV1H334JZ	POLYESTER 50V 0.33 +-5%		
C2054		ECQM1H682KV	POLYESTER 50V 0.0068	1	
		OR ECQM1H682KZ	POLYESTER 50V 0.0068		
C2055		ECQM1H332KV	POLYESTER 50V 0.0033	1	
		OR ECQM1H332KZ	POLYESTER 50V 0.0033		
C2056		ECQV05334JZ	POLYESTER 50V 0.33 +-5%	1	
		OR ECQV1H334JZ	POLYESTER 50V 0.33 +-5%		
C2057		ECQM1H332KV	POLYESTER 50V 0.0033	1	
		OR ECQM1H332KZ	POLYESTER 50V 0.0033		
C2058		VCYSARC332NX	CERAMIC 16V 0.0033	1	
			+-30%		
C2059		VCYSARH102KB	CERAMIC 50V 0.001	1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
C2060		ECKW1H102ZF5	CERAMIC 50V 0.001	1	
			+80%-20%		
C2061		ECQV05334JZ	POLYESTER 50V 0.33 +-5%	1	
		OR ECQV1H334JZ	POLYESTER 50V 0.33 +-5%		
C3206		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C4001		ECKW1H102KB5	CERAMIC 50V 0.001	1	
C4002		ECEA50M1R	ELECTROLYTIC 50V 1	1	
C4003		ECEA1AS330	ELECTROLYTIC 10V 33	1	
		OR ECEA1AU330	ELECTROLYTIC 10V 33		
C4004		ECQM1H333KV	POLYESTER 50V 0.033	1	
		OR ECQM1H333KZ	POLYESTER 50V 0.033		
C4005		ECEA50ZR33	ELECTROLYTIC 50V 0.33	1	
C4006		VCYW1E103KX	CERAMIC 25V 0.01	1	
C4007		ECEA1AS330	ELECTROLYTIC 10V 33	1	
		OR ECEA1AU330	ELECTROLYTIC 10V 33		
C4008		ECEA1HS010	ELECTROLYTIC 50V 1	1	
		OR ECEA1HU010	ELECTROLYTIC 50V 1		
C4009		ECKW1H102KB5	CERAMIC 50V 0.001	1	
C4010		ECEA1CS100	ELECTROLYTIC 16V 10	1	
		OR ECEA1CU100	ELECTROLYTIC 16V 10		
C4011		ECEA1HS010	ELECTROLYTIC 50V 1	1	
		OR ECEA1HU010	ELECTROLYTIC 50V 1		
C4012		ECEA1CS100	ELECTROLYTIC 16V 10	1	
		OR ECEA1CU100	ELECTROLYTIC 16V 10		
C4013		ECEA1CS220	ELECTROLYTIC 16V 22	1	
		OR ECEA1CU220	ELECTROLYTIC 16V 22		
C4014		ECEA1HS0R1	ELECTROLYTIC 50V 0.1	1	
		OR ECEA1HU0R1	ELECTROLYTIC 50V 0.1		
C4015		ECEA1CS100	ELECTROLYTIC 16V 10	1	
		OR ECEA1CU100	ELECTROLYTIC 16V 10		
C4016		ECEA1AS330	ELECTROLYTIC 10V 33	1	
		OR ECEA1AU330	ELECTROLYTIC 10V 33		
C4018,4019		ECEA50Z0R1	ELECTROLYTIC 50V 0.1	2	
C4020		VCYW1E563KX	CERAMIC 25V 0.056	1	
C4021		ECEA50ZR22	ELECTROLYTIC 50V 0.22	1	
C4022		ECEA50ZR47	ELECTROLYTIC 50V 0.47	1	
C4023		ECEA1CS220	ELECTROLYTIC 16V 22	1	
		OR ECEA1CU220	ELECTROLYTIC 16V 22		
C4024		ECCW2H221K2	CERAMIC 500V 220P	1	
C4025		ECQM2682KZ	POLYESTER 200V 0.0068	1	
C4026,4027		ECKW1H103ZF5	CERAMIC 50V 0.01	2	
			+80%-20%		
C4028		ECEA1CS220	ELECTROLYTIC 16V 22	1	
		OR ECEA1CU220	ELECTROLYTIC 16V 22		
C4029		ECEA1HS010	ELECTROLYTIC 50V 1	1	
		OR ECEA1HU010	ELECTROLYTIC 50V 1		
C4030		ECEA1CS220	ELECTROLYTIC 16V 22	1	
		OR ECEA1CU220	ELECTROLYTIC 16V 22		
C4031		ECEA1ES4R7	ELECTROLYTIC 25V 4.7	1	
		OR ECEA1EU4R7	ELECTROLYTIC 25V 4.7		
C4032		ECEA1CS330	ELECTROLYTIC 16V 33	1	
		OR ECEA1CU330	ELECTROLYTIC 16V 33		
C4045		ECKW1H471KB5	CERAMIC 50V 470P	1	
C4046		VCYS0001	MULTI FUNCTION 0.01	1	
C4701,4702		ECEA1CS330	ELECTROLYTIC 16V 33	2	
		OR ECEA1CU330	ELECTROLYTIC 16V 33		
C4703		ECEA1AK330	ELECTROLYTIC 10V 33	1	
C4704		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	1	
C4705		ECEA1HK0R1	ELECTROLYTIC 50V 0.1	1	
C4706		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	1	
C4707		ECCW1H151J5	CERAMIC 50V 150P +-5%	1	
		OR ECCW1H151K5	CERAMIC 50V 150P		
C4708		ECKW1H102KB5	CERAMIC 50V 0.001	1	
C4709		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	1	
C4710		ECEA1CK100	ELECTROLYTIC 16V 10	1	
C4711,4712		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	2	
C4713,4714		ECCW1H151J5	CERAMIC 50V 150P +-5%	2	
		OR ECCW1H151K5	CERAMIC 50V 150P		
C4715		ECEA1CK100	ELECTROLYTIC 16V 10	1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
C6002		ECEA1CS100	ELECTROLYTIC 16V 10	1	
C6003		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C6004		ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
C6005		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C6006		ECCW1H080CC	CERAMIC 50V 8P	1	
			+-0.25PF		
C6007		ECRHA020D11	TRIMMER 20P	1	
		OR MCV03R200ER	TRIMMER 20P		
C6009,6010		ECKW1H472ZF5	CERAMIC 50V 0.0047	2	
			+80%-20%		
C6011		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C6012		VCYW1C104MX	CERAMIC 16V 0.1	1	
			+-20%		
C6013		ECKW1H222ZF5	CERAMIC 50V 0.0022	1	
			+80%-20%		
C6014		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C6017		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C6019		ECEA1CS221	ELECTROLYTIC 16V 220	1	
C6021,6022		VCYW1C104MX	CERAMIC 16V 0.1	2	
			+-20%		
C6024		VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C6025		ECKW1H102ZF5	CERAMIC 50V 0.001	1	
			+80%-20%		
C6026		ECEA0JK101	ELECTROLYTIC 6.3V 100	1	
C6031		ECCF1H470JC	CERAMIC 50V 47P +-5%	1	
		ECCW1H470JC5	CERAMIC 50V 47P +-5%		
C6201-6203		ECKW1H103ZF5	CERAMIC 50V 0.01	3	
			+80%-20%		
			COILS		
L4001		VLQS68F222K	2.2M	1	
L4002		VLQS67F222K	2.2M	1	
L4003		VLQS66F471K	470	1	
L6001		VLQS66R101K	100	1	
			CRYSTALS OSCILLATOR		
X6001		VSXS0002		1	
			PIN HEADER		
P2001		VJPS0016	12P	1	
P2002		VJPS0100	4P	1	
P2003		VJPS0098	2P	1	
P2004		VJPS0041	10P	1	
P2005		VJPS0098	2P	1	
P2006		VJPS0104	8P	1	
P3201		VJPS0104	8P	1	
P4001		VJPS0100	4P	1	
P6001		VJPS0107	11P	1	
P6002		VJPS0106	2P	1	
P6003		VJPS0101	5P	1	
P6005		VJPS0098	2P	1	
P6008		VJPS0105	9P	1	
P6009		VJPS0022	7P	1	
			SWITCH		
SW2001		VSSS0033	SELECT	1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
			TRANSFORMER		
T4001		EIQ7QG002B		1	
			MISCELLANEOUS		
		TMM7443	CLAMPER	3	
		VEKS1890	LUG ASS'Y	2	
		VMTS0035	CUSHION	3	
		VMXS0573	SPACER	4	
		VSCS0495	SHIELD CASE	1	
		VSCS0496	SHIELD CASE	1	
		VZFS0006	CLAMPER	2	
		VEKS1947	LUG ASS'Y	1	
			SERVO/SUB AUDIO/SYSTEM CONTROL		(B)
			C.B.A		
			INTEGRATED CIRCUITS		
IC2001		AN6359		1	
		OR AN6359N			
IC2002		MN6168VIB		1	
IC2003		AN6356N		1	
IC2004		AN6387		1	
IC2005		UPD6110CA		1	
IC2006,2007		AN1358		2	
		OR AN6562			
		OR HA17358			
		OR UPC1358C			
IC3201		TA7348P		1	
IC4701,4702		AN6558		2	
		OR BA4558			
IC4703,4704		TA7347P		2	
IC4705		BA715		1	
		OR TA75557S			
IC6001		MN15846VRC		1	
IC6003		MB88201-128L		1	
IC6004,6005		BA6209U1		2	
			TRANSISTORS		
Q2001,2002		2SA937M(R)		2	
		OR			
		2SB641(Q,R,S)			
Q2003,2004		2SC2021M(R)		2	
		OR			
		2SD636(Q,R,S)			
Q2005,2006		2SA937M(R)		2	
		OR			
		2SB641(Q,R,S)			
Q2007-2011		2SC2021M(R)		5	
		OR			
		2SD636(Q,R,S)			
Q2012		2SA937M(R)		1	
		OR			
		2SB641(Q,R,S)			
Q2013		2SD1266		1	
		OR 2SD856			
Q2014		2SA937M(R)		1	
		OR			
		2SB641(Q,R,S)			
Q2015		2SC2021M(R)		1	
		OR			
		2SD636(Q,R,S)			
Q3201		2SC2021M(R)		1	
		OR			

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
		2SD636(Q,R,S)			
Q4701		2SD636(Q,R,S)		1	
Q4702		2SB641(Q,R)		1	
Q4703		2SD655(E,F)		1	
		OR 2SD661(S,T)			
Q4704		2SB641(Q,R)		1	
Q4705		2SD655(E,F)		1	
		OR 2SD661(S,T)			
Q4706,4707		2SD636(Q,R,S)		2	
Q6001		2SA937M(R)		1	
		OR			
		2SB641(Q,R,S)			
Q6002-6005		2SC2021M(R)		4	
		OR			
		2SD636(Q,R,S)			
Q6006		2SD638(Q,R,S)		1	
Q6007-6009		2SC2021M(R)		3	
		OR			
		2SD636(Q,R,S)			
Q6010-6012		2SA937M(R)		3	
		OR			
		2SB641(Q,R,S)			
Q6014		2SC2021M(R)		1	
		OR			
		2SD636(Q,R,S)			
Q6016		2SC2021M(R)		1	
		OR			
		2SD636(Q,R,S)			
Q6019		2SC2021M(R)		1	
		OR			
		2SD636(Q,R,S)			
Q6021		2SA937M(R)		1	
		OR			
		2SB641(Q,R,S)			
			DIODES		
D2001-2007		MA165		7	
		OR 1SS119			
D2009-2019		MA165		11	
		OR 1SS119			
D3201-3205		EQA02-13	ZENER	5	
		OR MA4130	ZENER		
		OR RD13EB	ZENER		
D4701		MA165		1	
D4702		MA4130	ZENER	1	
D4703		MA165		1	
D4704-4709		MA4130	ZENER	6	
D4710,4711		MA165		2	
D6001-6004		MA165		4	
D6005		EQA02-06-A	ZENER	1	
		OR EQA02-06-B	ZENER		
		OR MA1056	ZENER		
		OR RD5.6EB2	ZENER		
D6006,6007		MA165		2	
D6009-6015		MA165		7	
D6017,6018		MA165		2	
D6022,6023		MA165		2	
D6027		MA165		1	
D6030-6041		MA165		12	
D6199		MA165		1	
D6201		EQA02-20	ZENER	1	
		OR RD20EB	ZENER		
			RESISTORS		
RX6001		EXBP84223K	1/8W 22K +-10%	1	
R2001		ERDS2TJ223	22K	1	
R2002		ERDS2TJ334	330K	1	
R2003		ERDS2TJ272	2.7K	1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
R2004		ERDS2TJ473	47K	1	
R2006		ERDS2TJ153	15K	1	
R2007		ERDS2TJ472	4.7K	1	
R2008		ERDS2TJ153	15K	1	
R2009-2011		ERDS2TJ103	10K	3	
R2012		ERDS2TJ153	15K	1	
R2013		ERDS2TJ105	1M	1	
R2014		ERDS2TJ333	33K	1	
R2015		ERDS2TJ102	1K	1	
R2016		ERDS2TJ472	4.7K	1	
R2017		ERDS2TJ103	10K	1	
R2018,2019		ERDS2TJ332	3.3K	2	
R2020-2022		ERDS2TJ470	47	3	
R2023		EROS2TKG1801	PRECISION METAL FILM 1.8K +-2%	1	
R2024		EROS2TKG6801	PRECISION METAL FILM 6.8K +-2%	1	
R2025	⚠	ERX12ANJR56	METAL OXIDE 1/2W 0.56	1	
	⚠	OR ERX12SJR56	METAL OXIDE 1/2W 0.56		
R2026		ERDS2TJ104	100K	1	
R2027		ERDS2TJ124	120K	1	
R2028		ERDS2TJ104	100K	1	
R2029		ERDS2TJ333	33K	1	
R2030		ERDS2TJ124	120K	1	
R2031		ERDS2TJ272	2.7K	1	
R2032,2033		ERDS2TJ154	150K	2	
R2034		ERDS2TJ274	270K	1	
R2035		ERDS2TJ473	47K	1	
R2036		ERDS2TJ822	8.2K	1	
R2037		EROS2TKG6801	PRECISION METAL FILM 6.8K +-2%	1	
R2038,2039		EROS2TKG1002	PRECISION METAL FILM 10K +-2%	2	
R2040		EROS2TKG1202	PRECISION METAL FILM 12K +-2%	1	
R2041		ERDS2TJ154	150K	1	
R2042		ERDS2TJ104	100K	1	
R2043		ERDS2TJ682	6.8K	1	
R2044,2045		ERDS2TJ104	100K	2	
R2046		ERDS2TJ563	56K	1	
R2047		ERDS2TJ104	100K	1	
R2048		ERDS2TJ393	39K	1	
R2049,2050		ERDS2TJ104	100K	2	
R2051		ERDS2TJ563	56K	1	
R2052-2054		ERDS2TJ393	39K	3	
R2055		EROS2TKG1003	PRECISION METAL FILM 100K +-2%	1	
R2056		ERDS2TJ103	10K	1	
R2057		EROS2TKG1202	PRECISION METAL FILM 12K +-2%	1	
R2058		EROS2TKG1602	PRECISION METAL FILM 16K +-2%	1	
R2059		ERDS2TJ224	220K	1	
R2060		ERDS2TJ103	10K	1	
R2061		EVJFFAF15B15	VARIABLE TRACKING 100K	1	
R2064		ERDS2TJ562	5.6K	1	
R2065		ERDS2TJ104	100K	1	
R2066		EVNE4AA00B54	VARIABLE 50K	1	
R2067,2068		ERDS2TJ102	1K	2	
R2069		EVN38CA00B15	VARIABLE 100K	1	
R2070,2071		ERDS2TJ104	100K	2	
R2072		EVJFPAF15B15	VARIABLE SLOW TRACKING 100K	1	
R2073		ERDS2TJ222	2.2K	1	
R2074		ERDS2TJ181	180	1	
R2075		ERDS2TJ223	22K	1	
R2076		ERDS2TJ474	470K	1	
R2077		ERDS2TJ563	56K	1	
R2078,2079		ERDS2TJ104	100K	2	
R2080		ERDS2TJ333	33K	1	
R2081		ERDS2TJ103	10K	1	
R2082		ERDS2TJ223	22K	1	
R2083,2084		ERDS2TJ823	82K	2	
R2085		ERDS2TJ332	3.3K	1	
R2086		ERDS2TJ103	10K	1	
R2087		ERDS2TJ333	33K	1	
R2088,2089		ERDS2TJ104	100K	2	
R2090		ERDS2TJ184	180K	1	
R2091		ERDS2TJ104	100K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R2092	ERDS2TJ684	680K	1	
R2093	ERDS2TJ224	220K	1	
R2094	ERDS2TJ223	22K	1	
R2096	ERDS2TJ103	10K	1	
R2097	EVN38CA00B54	VARIABLE 50K	1	
R2098	EVN38CA00B15	VARIABLE 100K	1	
R2099,2100	EVLS3MA00B15	VARIABLE 100K	2	
R2101	ERDS2TJ223	22K	1	
R2102	ERDS2TJ273	27K	1	
R2103	ERDS2TJ154	150K	1	
R2104	ERDS2TJ472	4.7K	1	
R2105,2106	ERDS2TJ103	10K	2	
R2107	ERDS2TJ473	47K	1	
R2109	ERDS2TJ822	8.2K	1	
R2114	ERDS2TJ103	10K	1	
R2121	ERDS2TJ473	47K	1	
R2122	ERDS2TJ103	10K	1	
R2124	ERDS2TJ103	10K	1	
R2125	ERDS2TJ222	2.2K	1	
R3201	ERDS2TJ101	100	1	
R3202	ERDS2TJ103	10K	1	
R3203	ERDS2TJ562	5.6K	1	
R3205	ERDS2TJ272	2.7K	1	
R3206	ERDS2TJ103	10K	1	
R3207	ERDS2TJ563	56K	1	
R3208	ERDS2TJ473	47K	1	
R3209	EVJFFAF15B24	VARIABLE 20K	1	
R3210	ERDS2TJ123	12K	1	
R3211	ERDS2TJ472	4.7K	1	
R3212	ERDS2TJ102	1K	1	
R4701	ERDS2TJ182	1.8K	1	
R4702,4703	ERDS2TJ103	10K	2	
R4704	ERDS2TJ105	1M	1	
R4705	ERDS2TJ101	100	1	
R4706	ERDS2TJ104	100K	1	
R4707	ERDS2TJ183	18K	1	
R4708	ERDS2TJ103	10K	1	
R4709	ERDS2TJ473	47K	1	
R4710	ERDS2TJ563	56K	1	
R4711	ERDS2TJ562	5.6K	1	
R4712	ERDS2TJ473	47K	1	
R4713	ERDS2TJ563	56K	1	
R4714	ERDS2TJ182	1.8K	1	
R4715	ERDS2TJ473	47K	1	
R4716	ERDS2TJ105	1M	1	
R4717	ERDS2TJ101	100	1	
R4718	ERDS2TJ104	100K	1	
R4719	ERDS2TJ183	18K	1	
R4720	ERDS2TJ103	10K	1	
R4721	ERDS2TJ563	56K	1	
R4722	ERDS2TJ562	5.6K	1	
R4723,4724	ERDS2TJ473	47K	2	
R4725	ERDS2TJ563	56K	1	
R4726	ERDS2TJ182	1.8K	1	
R4727	ERDS2TJ473	47K	1	
R4728,4729	ERDS2TJ151	150	2	
R4730	ERDS2TJ473	47K	1	
R4731	ERDS2TJ472	4.7K	1	
R4732	ERDS2TJ473	47K	1	
R4733	ERDS2TJ472	4.7K	1	
R4734,4735	ERDS2TJ223	22K	2	
R4736	ERDS2TJ182	1.8K	1	
R4737	ERDS2TJ472	4.7K	1	
R4738,4739	ERDS2TJ154	150K	2	
R4740,4741	ERDS2TJ104	100K	2	
R4742,4743	ERDS2TJ102	1K	2	
R4744	ERDS2TJ272	2.7K	1	
R4745	ERDS2TJ103	10K	1	
R4746,4747	ERDS2TJ392	3.9K	2	
R4748,4749	ERDS2TJ154	150K	2	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
R6001	⚠	ERG1ANJ181	METAL OXIDE 1W 180	1	
R6002,6003		ERDS2TJ333	33K	2	
R6004		ERDS2TJ472	4.7K	1	
R6005		ERDS2TJ153	15K	1	
R6006		ERDS2TJ332	3.3K	1	
R6007		ERDS2TJ152	1.5K	1	
R6008,6009		ERDS2TJ223	22K	2	
R6010		ERDS2TJ472	4.7K	1	
R6011		ERDS2TJ474	470K	1	
R6012		ERDS2TJ472	4.7K	1	
R6013,6014		ERDS2TJ104	100K	2	
R6015		ERDS2TJ472	4.7K	1	
R6021		ERDS2TJ824	820K	1	
R6022		ERDS2TJ102	1K	1	
R6023		ERDS2TJ273	27K	1	
R6024		ERDS2TJ123	12K	1	
R6025		ERDS2TJ102	1K	1	
R6026		ERDS2TJ223	22K	1	
R6027		ERDS2TJ563	56K	1	
R6028		ERDS2TJ102	1K	1	
R6031		ERDS1TJ101	1/2W 100	1	
R6032-6034		ERDS2TJ222	2.2K	3	
R6035		ERDS2TJ333	33K	1	
R6036		ERDS2TJ224	220K	1	
R6037		ERDS2TJ822	8.2K	1	
R6038		ERDS2TJ223	22K	1	
R6039-6041		ERDS2TJ822	8.2K	3	
R6042-6044		ERDS2TJ223	22K	3	
R6045		ERDS2TJ332	3.3K	1	
R6046		ERDS2TJ154	150K	1	
R6047		ERDS2TJ224	220K	1	
R6048,6049		ERDS2TJ223	22K	2	
R6053		ERDS2TJ222	2.2K	1	
R6054		ERDS2TJ392	3.9K	1	
R6055		ERDS2TJ683	68K	1	
R6056,6057		ERDS2TJ822	8.2K	2	
R6058-6061		ERDS2TJ682	6.8K	4	
R6062		ERDS2TJ822	8.2K	1	
R6063		ERDS2TJ223	22K	1	
R6064		ERDS2TJ471	470	1	
R6068,6069		ERDS2TJ392	3.9K	2	
R6070		ERDS2TJ103	10K	1	
R6071		ERDS2TJ682	6.8K	1	
R6072,6073		ERDS2TJ103	10K	2	
R6075		ERDS2TJ103	10K	1	
R6077,6078		ERDS2TJ102	1K	2	
R6079		ERDS2TJ103	10K	1	
R6080,6081		ERDS2TJ472	4.7K	2	
R6082,6083		ERDS2TJ103	10K	2	
R6084,6085		ERDS2TJ472	4.7K	2	
R6086		ERDS2TJ563	56K	1	
R6087		ERDS2TJ104	100K	1	
R6088		ERDS2TJ472	4.7K	1	
R6089		ERDS2TJ102	1K	1	
R6091		ERDS2TJ102	1K	1	
R6092		ERDS2TJ103	10K	1	
R6093,6094		ERDS2TJ102	1K	2	
R6095		ERDS2TJ472	4.7K	1	
R6096	⚠	ERDS1FJ2R7	1/2W 2.7	1	
R6097		ERDS2TJ102	1K	1	
R6098		ERDS2TJ104	100K	1	
R6099		ERDS2TJ333	33K	1	
R6100		ERDS2TJ103	10K	1	
R6103,6104		ERDS2TJ472	4.7K	2	
R6108		ERDS2TJ274	270K	1	
R6109		ERDS2TJ333	33K	1	
R6111		ERDS2TJ102	1K	1	
R6112,6113		ERDS2TJ472	4.7K	2	
R6114,6115		ERDS2TJ102	1K	2	
R6117		ERDS2TJ102	1K	1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
R6120		ERDS2TJ333	33K	1	
R6123,6124		ERDS2TJ223	22K	2	
R6128		ERDS2TJ332	3.3K	1	
R6133		ERDS2TJ103	10K	1	
R6197		ERDS2TJ562	5.6K	1	
R6198,6199		ERDS2TJ104	100K	2	
R6201		ERDS2TJ102	1K	1	
			CAPACITORS		
C2001		ECEA1HS010	ELECTROLYTIC 50V 1	1	
		OR ECEA1HU010	ELECTROLYTIC 50V 1		
C2002		VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C2003		ECEA1EN3R3S	ELECTROLYTIC 25V 3.3	1	
C2004		ECQM1H103KV	POLYESTER 50V 0.01	1	
		OR ECQM1H103KZ	POLYESTER 50V 0.01		
C2005		ECEA1CS100	ELECTROLYTIC 16V 10	1	
		OR ECEA1CU100	ELECTROLYTIC 16V 10		
C2006		ECEA1HS010	ELECTROLYTIC 50V 1	1	
		OR ECEA1HU010	ELECTROLYTIC 50V 1		
C2007		ECEA1HN010S	ELECTROLYTIC 50V 1	1	
C2008		ECEA1HS0R1	ELECTROLYTIC 50V 0.1	1	
		OR ECEA1HU0R1	ELECTROLYTIC 50V 0.1		
C2009		VCYSARH222NX	CERAMIC 16V 0.0022 +-30%	1	
C2010		VCYW1E152KX	CERAMIC 25V 0.0015	1	
C2011		ECEA1HS2R2	ELECTROLYTIC 50V 2.2	1	
		OR ECEA1HU2R2	ELECTROLYTIC 50V 2.2		
C2012		ECEA1HN2R2S	ELECTROLYTIC 50V 2.2	1	
C2013		ECEA1CS101	ELECTROLYTIC 16V 100	1	
		OR ECEA1CU101	ELECTROLYTIC 16V 100		
C2014		VCYSARC682NX	CERAMIC 16V 0.0068	1	
			+-30%		
C2015		ECEA1CS221	ELECTROLYTIC 16V 220	1	
		OR ECEA1CU221	ELECTROLYTIC 16V 220		
C2016,2017		ECEA1HN2R2S	ELECTROLYTIC 50V 2.2	2	
C2018		VCYSARH102KB	CERAMIC 50V 0.001	1	
C2019		ECEA1ES3R3	ELECTROLYTIC 25V 3.3	1	
		OR ECEA1EU3R3	ELECTROLYTIC 25V 3.3		
C2020		ECQM1H123KV	POLYESTER 50V 0.012	1	
		OR ECQM1H123KZ	POLYESTER 50V 0.012		
C2021		ECEA1HSR22	ELECTROLYTIC 50V 0.22	1	
		OR ECEA1HUR22	ELECTROLYTIC 50V 0.22		
C2022		ECEA1HS010	ELECTROLYTIC 50V 1	1	
		OR ECEA1HU010	ELECTROLYTIC 50V 1		
C2023		VCYSARC472NX	CERAMIC 16V 0.0047 +-30%	1	
C2024		ECQM1H102KV	POLYESTER 50V 0.001	1	
		OR ECQM1H102KZ	POLYESTER 50V 0.001		
C2025		ECQM1H562KV	POLYESTER 50V 0.0056	1	
		OR ECQM1H562KZ	POLYESTER 50V 0.0056		
C2026		ECEA1HS0R1	ELECTROLYTIC 50V 0.1	1	
		OR ECEA1HU0R1	ELECTROLYTIC 50V 0.1		
C2027		ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
		OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C2028		ECQM1H562KV	POLYESTER 50V 0.0056	1	
		OR ECQM1H562KZ	POLYESTER 50V 0.0056		
C2029		ECEA1HS0R1	ELECTROLYTIC 50V 0.1	1	
		OR ECEA1HU0R1	ELECTROLYTIC 50V 0.1		
C2030		ECQM1H562KV	POLYESTER 50V 0.0056	1	
		OR ECQM1H562KZ	POLYESTER 50V 0.0056		
C2031		ECEA0JS101	ELECTROLYTIC 6.3V 100	1	
		OR ECEA0JU101	ELECTROLYTIC 6.3V 100		
C2032		VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C2033,2034		ECEA0JS470	ELECTROLYTIC 6.3V 47	2	
		OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C2035		ECQV05104JZ	POLYESTER 50V 0.1 +-5%	1	
		OR ECQV1H104JZ	POLYESTER 50V 0.1 +-5%		
C2036		ECQM1H472JV	POLYESTER 50V 0.0047 +-5%	1	
		OR ECQM1H472JZ	POLYESTER 50V 0.0047 +-5%		
C2037		ECQV05563JZ	POLYESTER 50V 0.056 +-5%	1	
		OR ECQV1H563JZ	POLYESTER 50V 0.056 +-5%		
C2038		ECQV05124JZ	POLYESTER 50V 0.12 +-5%	1	
		OR ECQV1H124JZ	POLYESTER 50V 0.12 +-5%		
C2039		ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
		OR ECEA0JU221	ELECTROLYTIC 6.3V 220		
C2040		ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
		OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C2041		VCYSARC472NX	CERAMIC 16V 0.0047 +-30%	1	
C2042		ECQM1H333KV	POLYESTER 50V 0.033	1	
		OR ECQM1H333KZ	POLYESTER 50V 0.033		
C2043		ECQV05274JZ	POLYESTER 50V 0.27 +-5%	1	
		OR ECQV1H274JZ	POLYESTER 50V 0.27 +-5%		
C2044		ECQM1H272KV	POLYESTER 50V 0.0027	1	
		OR ECQM1H272KZ	POLYESTER 50V 0.0027		
C2045,2046		ECEA1CS100	ELECTROLYTIC 16V 10	2	
		OR ECEA1CU100	ELECTROLYTIC 16V 10		
C2047		ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
		OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C2048		VCYW1E223KX	CERAMIC 25V 0.022	1	
C2049		ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
		OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C2050		ECQM1H333KV	POLYESTER 50V 0.033	1	
		OR ECQM1H333KZ	POLYESTER 50V 0.033		
C2051		VCYSARC332NX	CERAMIC 16V 0.0033	1	
			+-30%		
C2052		VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C2053		ECQV05334JC	POLYESTER 50V 0.33 +-5%	1	
		OR ECQV05334JZ	POLYESTER 50V 0.33 +-5%		
		OR ECQV1H334JZ	POLYESTER 50V 0.33 +-5%		
C2054		ECQM1H682KV	POLYESTER 50V 0.0068	1	
		OR ECQM1H682KZ	POLYESTER 50V 0.0068		
C2055		ECQM1H332KV	POLYESTER 50V 0.0033	1	
		OR ECQM1H332KZ	POLYESTER 50V 0.0033		
C2056		ECQV05334JC	POLYESTER 50V 0.33 +-5%	1	
		OR ECQV05334JZ	POLYESTER 50V 0.33 +-5%		
		OR ECQV1H334JZ	POLYESTER 50V 0.33 +-5%		
C2057		ECQM1H332KV	POLYESTER 50V 0.0033	1	
		OR ECQM1H332KZ	POLYESTER 50V 0.0033		
C2058		VCYSARC332NX	CERAMIC 16V 0.0033	1	
			+-30%		
C2059		VCYSARH102KB	CERAMIC 50V 0.001	1	
C2060		ECKW1H102ZF5	CERAMIC 50V 0.001	1	
			+80%-20%		
C2061		ECQV05334JC	POLYESTER 50V 0.33 +-5%	1	
		OR ECQV05334JZ	POLYESTER 50V 0.33 +-5%		
C3201		ECEA1HS3R3	ELECTROLYTIC 50V 3.3	1	
		OR ECEA1HU3R3	ELECTROLYTIC 50V 3.3		
C3202		ECEA1ES100	ELECTROLYTIC 25V 10	1	
C3203,3204		ECEA1HS2R2	ELECTROLYTIC 50V 2.2	2	
C3205		ECEA1CS470	ELECTROLYTIC 16V 47	1	
C3206		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C4701,4702		ECEA1CK330	ELECTROLYTIC 16V 33	2	
C4703		ECEA1AK330	ELECTROLYTIC 10V 33	1	
C4704		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	1	
C4705		ECEA1HK0R1	ELECTROLYTIC 50V 0.1	1	
C4706		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	1	
C4707		ECCW1H151K5	CERAMIC 50V 150P	1	
C4708		ECKW1H102KB5	CERAMIC 50V 0.001	1	
C4709		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	1	
C4710		ECEA1CK100	ELECTROLYTIC 16V 10	1	
C4711,4712		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	2	
C4713,4714		ECCW1H151K5	CERAMIC 50V 150P	2	
C4715		ECEA1CK100	ELECTROLYTIC 16V 10	1	
C4716		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	1	
C4717		ECEA1HK0R1	ELECTROLYTIC 50V 0.1	1	
C4718		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	1	
C4719		ECCW1H151K5	CERAMIC 50V 150P	1	
C4720		ECKW1H102KB5	CERAMIC 50V 0.001	1	
C4721		ECEA1EK3R3	ELECTROLYTIC 25V 3.3	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
C4722	ECEA1CK100	ELECTROLYTIC 16V 10	1	
C4723,4724	ECEA1EK3R3	ELECTROLYTIC 25V 3.3	2	
C4725,4726	ECCW1H151K5	CERAMIC 50V 150P	2	
C4727	ECEA1CK100	ELECTROLYTIC 16V 10	1	
C4728,4729	VCYS0001	MULTI FUNCTION 0.01	2	
C4730	ECCW1H820J5	CERAMIC 50V 82P +-5%	1	
	OR ECCW1H820K5	CERAMIC 50V 82P		
C4731	ECEA1ES4R7	ELECTROLYTIC 25V 4.7	1	
C4732	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C4733	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4735	ECCW1H820J5	50V 82P +-5%	1	
	OR ECCW1H820K5	CERAMIC 50V 82P		
C4736	ECEA1ES4R7	ELECTROLYTIC 25V 4.7	1	
C4737	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C4738	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4740	ECEA1AS330	ELECTROLYTIC 10V 33	1	
C4741,4742	ECEA1CS330	ELECTROLYTIC 16V 33	2	
C4743	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4744	ECEA1ES3R3	ELECTROLYTIC 25V 3.3	1	
C4745	ECEA1EN4R7S	ELECTROLYTIC 25V 4.7	1	
C4746,4747	ECEA1ES3R3	ELECTROLYTIC 25V 3.3	2	
C4748	ECEA1EN4R7S	ELECTROLYTIC 25V 4.7	1	
C4749-4751	ECKW1H102KB5	CERAMIC 50V 0.001	3	
C6001	ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
C6002	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C6003	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C6004	ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
C6005	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C6006	ECCW1H180CC	CERAMIC 50V 18P	1	
		+-0.25P		
C6007	ECRHA020D11	TRIMMER 20P	1	
	OR MCV03R200ER	TRIMMER 20P		
C6008	EECW5R5F473	GOLD 5.5V 0.047	1	
C6009,6010	ECKW1H472ZF5	CERAMIC 50V 0.0047	2	
		+80%-20%		
C6011	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C6012	VCYW1C104MX	CERAMIC 16V 0.1	1	
		+-20%		
C6013	ECKW1H222ZF5	CERAMIC 50V 0.0022	1	
		+80%-20%		
C6015,6016	ECCW1H330JC5	CERAMIC 50V 33P	2	
	OR			
	ECCW1H330KC5	CERAMIC 50V 33P		
C6017	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C6018	ECEA1CS470	ELECTROLYTIC 16V 47	1	
C6019	ECEA1CS221	ELECTROLYTIC 16V 220	1	
C6020	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C6021,6022	VCYW1C104MX	CERAMIC 16V 0.1	2	
		+-20%		
C6023	ECEA0JS330	ELECTROLYTIC 6.3V 33	1	
C6024	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C6025	ECKW1H102ZF5	CERAMIC 50V 0.001	1	
		+80%-20%		
C6026	ECEA0JK101	ELECTROLYTIC 6.3V 100	1	
C6201	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
		COILS		
L6001,6002	VLQS66R101K	100	2	

Ref. No.	Part No	Part Name & Description	Pcs / Set	Remarks
		CRYSTALS OSCILLATOR		
X6001	VSXS0009		1	
	OR VSXS0011			
		PIN HEADERS		
P2001	VJPS0016	12P	1	
P2002	VJPS0100	4P	1	
P2003	VJPS0098	2P	1	
P2004	VJPS0041	10P	1	
P2005	VJPS0098	2P	1	
P2006	VJPS0104	8P	1	
P3201	VJPS0104	8P	1	
P3202	VJPS0099	3P	1	
P4701	VJPS0104	8P	1	
P6001	VJPS0107	11P	1	
P6002	VJPS0108	12P	1	
P6003	VJPS0099	3P	1	
P6004	VJPS0099	3P	1	
P6005	VJPS0098	2P	1	
P6008	VJPS0105	9P	1	
P6010	VJPS0103	7P	1	
		SWITCHES		
SW2001	VSSS0033	SELECT	1	
SW4701	VSSS0033	SELECT	1	
		MISCELLANEOUS		
	TMM7443	CLAMPER	3	
	VEKS1890	LUG ASS'Y	1	
	VJJS0069	REAR JACK	1	
	VMX0573	SPACER	4	
	VSCS0497	SHIELD CASE	1	
	VSCS0498	SHIELD CASE	1	
	VZFS0006	CLAMPER	2	
		SIGNAL PROCESS C.B.A		(A)
		TRANSISTORS		
Q3001,3002	2SC2021M(Q,R,S)		2	
	OR			
	2SD636(Q,R,S)			
Q3006	2SA937M(Q,R,S)		1	
	OR			
	2SB641(Q,R,S)			
Q3007,3008	2SC2021M(Q,R,S)		2	
	OR			
	2SD636(Q,R,S)			
Q3010	2SA937M(Q,R,S)		1	
	OR			
	2SB641(Q,R,S)			
Q4551	2SC2021M(R,S)		1	
	OR			
	2SD636(Q,R,S)			
Q4552	2SA950Y		1	
	OR 2SB643(R,S)			
Q4553	2SD637(Q,R)		1	
Q7001,7002	2SD637(Q,R,S)		2	
Q7004,7005	2SD637(Q,R,S)		2	
Q7006	2SD636(Q,R,S)		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		DIODES		
D3003	EQA02-09CD	ZENER	1	
	OR MA4091	ZENER		
	OR RD9.1EB2	ZENER		
	OR RD9.1EB3	ZENER		
D3004	MA165		1	
	OR 1SS119			
D3005	EQA02-11	ZENER	1	
	OR MA4110	ZENER		
	OR RD11EB	ZENER		
D3006	MA165		1	
	OR 1SS119			
D7001	MA165		1	
	OR 1SS119			
D7003	MA4100H	ZENER	1	
D7005	MA165		1	
	OR 1SS119			
D7006,7007	RD15EB	ZENER	2	
		RESISTORS		
R3001	EVNE4AA00B23	VARIABLE 2K	1	
R3002	ERDS2TJ821	820	1	
R3003	ERDS2TJ122	1.2K	1	
R3004	ERDS2TJ222	2.2K	1	
R3005	ERDS2TJ681	680	1	
R3006	ERDS2TJ820	82	1	
R3015	ERDS2TJ681	680	1	
R3016	EVNE4AA00B13	VARIABLE 1K	1	
R3017	ERDS2TJ561	560	1	
R3018	ERDS2TJ392	3.9K	1	
R3019	ERDS2TJ333	33K	1	
R3020	ERDS2TJ473	47K	1	
R3030,3031	ERDS2TJ103	10K	2	
R3034	ERDS2TJ471	470	1	
R3035	ERDS2TJ680	68	1	
R3036	ERDS2TJ102	1K	1	
R3037	ERDS2TJ561	560	1	
R3040	ERDS2TJ153	15K	1	
R3041	ERDS2TJ563	56K	1	
R3042	ERDS2TJ223	22K	1	
R3043-3045	ERDS2TJ473	47K	3	
R3046	ERDS2TJ333	33K	1	
R3048	ERDS2TJ682	6.8K	1	
R3049,3050	ERDS2TJ332	3.3K	2	
R3054	ERDS2TJ562	5.6K	1	
R3055	ERDS2TJ101	100	1	
R3056	ERDS2TJ681	680	1	
R3060	ERDS2TJ563	56K	1	
R3061	ERDS2TJ102	1K	1	
R3062	ERDS2TJ101	100	1	
R3064	ERDS2TJ102	1K	1	
R4551,4552	ERDS2TJ223	22K	2	
R4553	ERDS2TJ333	33K	1	
R4554,4555	ERDS2TJ472	4.7K	2	
R7001	ERDS2TJ183	18K	1	
R7002	ERDS2TJ222	2.2K	1	
R7003	ERDS2TJ183	18K	1	
R7004	AVNE4AA0B102	VARIABLE 1K	1	
	OR			
	EVNE4AA00B13	VARIABLE 1K		
R7005	ERDS2TJ681	680	1	
R7006	EROS2TKG6802	PRECISION METAL FILM 68K +-2%	1	
R7008	EROS2TKG1203	PRECISION METAL FILM 120K +-2%	1	
R7009	ERDS2TJ750	75	1	
R7011	ERDS2TJ103	10K	1	
R7012	ERDS2TJ473	47K	1	
R7013	ERDS2TJ104	100K	1	
R7016	ERDS2TJ393	39K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R7017,7018	ERDS2TJ104	100K	2	
R7019	ERDS1TJ151	1/2W 150	1	
R7020	ERDS2TJ103	10K	1	
R7021	ERDS2TJ153	15K	1	
R7022,7023	ERDS2TJ221	220	2	
R7026	ERDS2TJ151	150	1	
R7027	ERDS1TJ221	1/2W 220	1	
R7028	ERDS2TJ101	100	1	
R7030	ERDS2TJ561	560	1	
		CAPACITORS		
C3001	VCYSARH820KB	CERAMIC 50V 82	1	
C3002	VCYSARH471KB	CERAMIC 50V 470P	1	
C3003	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3004	VCYSARH820KB	CERAMIC 50V 82	1	
C3016	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3027	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3028	ECEA1CS470	ELECTROLYTIC 16V 47	1	
	OR ECEA1CU470	ELECTROLYTIC 16V 47		
C3029	ECEA0JS471	ELECTROLYTIC 6.3V 470	1	
	OR ECEA0JU471	ELECTROLYTIC 6.3V 470		
C3030	ECKF1H103ZV	CERAMIC 50V 0.01	1	
	OR	+80%-20%		
	ECKW1H103ZF5	CERAMIC 50V 0.01		
		+80%-20%		
C3031	ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
C3040	VCYSARH102KB	CERAMIC 50V 0.001	1	
C3041	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3042	ECEA1CN100S	ELECTROLYTIC 16V 10	1	
C3043	ECKF1H103ZV	CERAMIC 50V 0.01	1	
	OR	+80%-20%		
	ECKW1H103ZF5	CERAMIC 50V 0.01		
		+80%-20%		
C4551	ECEA1CS100	ELECTROLYTIC 16V 10	1	
	OR ECEA1CU100	ELECTROLYTIC 16V 10		
C4555	ECQB1H153KZ	POLYESTER 50V 0.015	1	
	OR VCYW1E153KX	CERAMIC 25V 0.015		
C4556	ECKW1H472ZF5	CERAMIC 50V 0.0047	1	
		+80%-20%		
C4557	ECQB1H333KH	POLYESTER 50V 0.033	1	
C4558	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C7001	ECEA1ES220	ELECTROLYTIC 25V 22	1	
	OR ECEA1EU220	ELECTROLYTIC 25V 22		
C7002	ECEA1ES4R7	ELECTROLYTIC 25V 4.7	1	
	OR ECEA1EU4R7	ELECTROLYTIC 25V 4.7		
C7003	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7004	ECQB1H103KZ	POLYESTER 50V 0.01	1	
	OR ECQM1H103KV	POLYESTER 50V 0.01		
	OR ECQM1H103KZ	POLYESTER 50V 0.01		
C7005	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7007	ECQB1H333KZ	POLYESTER 50V 0.033	1	
C7008	ECEA1HS010	ELECTROLYTIC 50V 1	1	
	OR ECEA1HU010	ELECTROLYTIC 50V 1		
C7009	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7010	ECEA1CS471	ELECTROLYTIC 16V 470	1	
	OR ECEA1CU471	ELECTROLYTIC 16V 470		
C7012	ECEA1CS470	ELECTROLYTIC 16V 47	1	
	OR ECEA1CU470	ELECTROLYTIC 16V 47		
C7013	ECEA50ZR1	ELECTROLYTIC 50V 0.1	1	
C7014	ECEA0JS102	ELECTROLYTIC 6.3V 1000	1	
	OR ECEA0JU102	ELECTROLYTIC 6.3V 1000		
C7016	ECEA1ES220	ELECTROLYTIC 25V 22	1	
	OR ECEA1EU220	ELECTROLYTIC 25V 22		

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
C7017	ECEA1CS221	ELECTROLYTIC 16V 220	1	
	OR ECEA1CU221	ELECTROLYTIC 16V 220		
C7020	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7021	ECQB1H273KZ	POLYESTER 50V 0.027	1	
	OR ECQM1H273KV	POLYESTER 50V 0.027		
C7023	ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
	OR ECEA0JU221	ELECTROLYTIC 6.3V 220		
C7024,7025	ECCW1H180JC5	CERAMIC 50V 18P +-5%	2	
C7026	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7027	ECEA1CS100	ELECTROLYTIC 16V 10	1	
	OR ECEA1CU100	ELECTROLYTIC 16V 10		
C7028	ECEA1HS010	ELECTROLYTIC 50V 1	1	
	OR ECEA1HU010	ELECTROLYTIC 50V 1		
C7029,7030	ECKW1H103ZF5	CERAMIC 50V 0.01	2	
		+80%-20%		
		COILS		
L3001	VLQS05R820K	82	1	
L3002	VLQS05R181K	180	1	
L3007	VLQS05R390K	39	1	
L3012	VLQS05R101K	100	1	
L4551	VLQS66F221K	220	1	
L7001,7002	VLQSL01101K	100	2	
L7003	VLQS66R470K	47	1	
L7004	VLQS66R330K	33	1	
		TRANSFORMER		
T4551	ELM7Q019E	DETECTOR	1	
		PRINTED CIRCUIT BOARD ASSEMBLY		
	VEPS0337A	LUMINANCE C.B.A	1	
	VEPS0508A1	HEAD AMP UNIT	1	
	VEPS0806A	CHROMINANCE C.B.A	1	
	VEQS0257	TV DEMODULATOR UNIT	1	
		MISCELLANEOUS		
	T18S	FASTENER	1	
	VEKS1793	LUG ASS'Y	2	
	VJR3	CLAMPER	1	
	VMAS0953	SIGNAL PROCESS C.B.A ANGLE	1	
	VMTS0035	CUSHION	3	
	VMX0573	SPACER	2	
	VMZS0066	INSULATOR SHEET	1	
	VZFS0006	CLAMPER	1	
		SIGNAL PROCESS C.B.A		(B)
		TRANSISTORS		
Q3001	2SC2021M(Q,R,S)		1	
	OR			
	2SD636(Q,R,S)			
Q3002	2SD636(Q,R,S)		1	

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
Q3006	2SA937M(Q,R,S)		1	
	OR			
	2SB641(Q,R,S)			
Q3007,3008	2SD636(Q,R,S)		2	
Q3010	2SA937M(Q,R,S)		1	
	OR			
	2SB641(Q,R,S)			
Q4551	2SD636		1	
Q4552	2SA950Y		1	
	OR 2SB643			
Q4553	2SD637		1	
Q7001,7002	2SD637(Q,R,S)		2	
Q7004,7005	2SD637(Q,R,S)		2	
Q7006	2SD636(Q,R,S)		1	
		DIODES		
D3003	EQA02-09-CD	ZENER	1	
	OR MA4091	ZENER		
	OR RD9.1EB2	ZENER		
	OR RD9.1EB3	ZENER		
D3004	MA165		1	
	OR 1SS119			
D3005	EQA02-11	ZENER	1	
	OR MA4110	ZENER		
	OR RD11EB	ZENER		
D3006	MA165		1	
	OR 1SS119			
D7001	MA165		1	
	OR 1SS119			
D7003	MA4100H	ZENER	1	
D7005	MA165		1	
	OR 1SS119			
D7006,7007	RD15EB	ZENER	2	
		RESISTORS		
R3001	EVNE4AA00B23	VARIABLE 2K	1	
R3002	ERDS2TJ821	820	1	
R3003	ERDS2TJ122	1.2K	1	
R3004	ERDS2TJ222	2.2K	1	
R3005	ERDS2TJ681	680	1	
R3006	ERDS2TJ820	82	1	
R3015	ERDS2TJ681	680	1	
R3016	EVNE4AA00B13	VARIABLE 1K	1	
R3017	ERDS2TJ561	560	1	
R3018	ERDS2TJ392	3.9K	1	
R3019	ERDS2TJ333	33K	1	
R3020	ERDS2TJ473	47K	1	
R3030,3031	ERDS2TJ103	10K	2	
R3034	ERDS2TJ471	470	1	
R3035	ERDS2TJ680	68	1	
R3036	ERDS2TJ102	1K	1	
R3037	ERDS2TJ561	560	1	
R3040	ERDS2TJ153	15K	1	
R3041	ERDS2TJ563	56K	1	
R3042	ERDS2TJ223	22K	1	
R3043-3045	ERDS2TJ473	47K	3	
R3046	ERDS2TJ333	33K	1	
R3048	ERDS2TJ682	6.8K	1	
R3049,3050	ERDS2TJ332	3.3K	2	
R3051	ERDS2TJ102	1K	1	
R3054	ERDS2TJ562	5.6K	1	
R3055	ERDS2TJ101	100	1	
R3056	ERDS2TJ681	680	1	
R3060	ERDS2TJ563	56K	1	
R3061	ERDS2TJ102	1K	1	
R3064	ERDS2TJ102	1K	1	

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
R4551,4552	ERDS2TJ223	22K	2	
R4553	ERDS2TJ333	33K	1	
R4554,4555	ERDS2TJ472	4.7K	2	
R7002	ERDS2TJ222	2.2K	1	
R7003	ERDS2TJ183	18K	1	
R7004	AVNE4AA0B102	VARIABLE 1K	1	
	OR			
	EVNE4AA00B13	VARIABLE 1K		
R7005	ERDS2TJ681	680	1	
R7006	EROS2TKG6802	PRECISION METAL FILM 68K +-2%	1	
R7008	EROS2TKG1203	PRECISION METAL FILM 120K +-2%	1	
R7011	ERDS2TJ103	10K	1	
R7012	ERDS2TJ473	47K	1	
R7013	ERDS2TJ104	100K	1	
R7016	ERDS2TJ393	39K	1	
R7017,7018	ERDS2TJ104	100K	2	
R7019	ERDS1TJ151	1/2W 150	1	
R7020	ERDS2TJ103	10K	1	
R7021	ERDS2TJ153	15K	1	
R7022,7023	ERDS2TJ221	220	2	
R7026	ERDS2TJ151	150	1	
R7027	ERDS1TJ221	1/2W 220	1	
R7028	ERDS2TJ101	100	1	
R7029	ERDS2TJ750	75	1	
		CAPACITORS		
C3001	VCYSARH820KB	CERAMIC 50V 82	1	
C3002	VCYSARH471KB	CERAMIC 50V 470P	1	
C3003	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3004	VCYSARH820KB	CERAMIC 50V 82	1	
C3016	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3027	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3028	ECEA1CS470	ELECTROLYTIC 16V 47	1	
	OR ECEA1CU470	ELECTROLYTIC 16V 47		
C3029	ECEA0JS471	ELECTROLYTIC 6.3V 470	1	
C3030	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C3031	ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
	OR ECEA0JU470	ELECTROLYTIC 6.3V 47		
C3040	VCYSARH102KB	CERAMIC 50V 0.001	1	
C3041	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3042	ECEA1CN100S	ELECTROLYTIC 16V 10	1	
C3043	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C4551	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4555	VCYW1E153KX	CERAMIC 25V 0.015	1	
C4556	ECKW1H472ZF5	CERAMIC 50V 0.0047	1	
		+80%-20%		
C4557	ECQB1H333JZ	POLYESTER 50V 0.033 +-5%	1	
	OR ECQB1H333KH	POLYESTER 50V 0.033		
	OR ECQB1H333KZ	POLYESTER 50V 0.033		
C4558	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C7001	ECEA1ES220	ELECTROLYTIC 25V 22	1	
	OR ECEA1EU220	ELECTROLYTIC 25V 22		
C7002	ECEA1ES4R7	ELECTROLYTIC 25V 4.7	1	
	OR ECEA1EU4R7	ELECTROLYTIC 25V 4.7		
C7003	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7004	ECQB1H103KZ	POLYESTER 50V 0.01	1	
	OR ECQM1H103KV	POLYESTER 50V 0.01		
	OR ECQM1H103KZ	POLYESTER 50V 0.01		
C7005	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7007	ECQB1H333KZ	POLYESTER 50V 0.033	1	
C7008	ECEA1HS010	ELECTROLYTIC 50V 1	1	
	OR ECEA1HU010	ELECTROLYTIC 50V 1		
C7009	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
C7010	ECEA1CS471	ELECTROLYTIC 16V 470	1	
	OR ECEA1CU471	ELECTROLYTIC 16V 470		
C7012	ECEA1CS470	ELECTROLYTIC 16V 47	1	
	OR ECEA1CU470	ELECTROLYTIC 16V 47		
C7013	ECEA50ZR1	ELECTROLYTIC 50V 0.1	1	
C7014	ECEA0JS102	ELECTROLYTIC 6.3V 1000	1	
	OR ECEA0JU102	ELECTROLYTIC 6.3V 1000		
C7016	ECEA1ES220	ELECTROLYTIC 25V 22	1	
	OR ECEA1EU220	ELECTROLYTIC 25V 22		
C7017	ECEA1CS221	ELECTROLYTIC 16V 220	1	
	OR ECEA1CU221	ELECTROLYTIC 16V 220		
C7020	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7021	ECQB1H273KZ	POLYESTER 50V 0.027	1	
	OR ECQM1H273KV	POLYESTER 50V 0.027		
C7023	ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
	OR ECEA0JU221	ELECTROLYTIC 6.3V 220		
C7024,7025	ECCW1H180JC5	CERAMIC 50V 18P +-5%	2	
C7026	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7027	ECEA1CS100	ELECTROLYTIC 16V 10	1	
	OR ECEA1CU100	ELECTROLYTIC 16V 10		
C7028	ECEA1HS010	ELECTROLYTIC 50V 1	1	
	OR ECEA1HU010	ELECTROLYTIC 50V 1		
		COILS		
L3001	VLQS04R820K	82	1	
	OR VLQS66R820K	82		
L3002	VLQS66R101K	100	1	
L3012	VLQS66R101K	100	1	
L4551	VLQS66F221K	220	1	
L7001,7002	VLQSL01101K	100	2	
L7003	VLQS66R470K	47	1	
L7004	VLQS66R330K	33	1	
		TRANSFORMER		
T4551	ELM7Q019E	DETECTOR	1	
		PRINTED CIRCUIT BOARD ASSEMBLY		
	VEPS0337A	LUMINANCE C.B.A	1	
	VEPS0508A1	HEAD AMP UNIT	1	
	VEPS0806A	CHROMINANCE C.B.A	1	
	VEQS0257	TV DEMODULATOR UNIT	1	
		MISCELLANEOUS		
	T18S	FASTENER	1	
	VEKS1793	LUG ASS'Y	1	
	VJR3	CLAMPER	1	
	VMAS0953	SIGNAL PROCESS C.B.A ANGLE	1	
	VMTS0035	CUSHION	10	
	VZFS0006	CLAMPER	1	
		POWER SUPPLY C.B.A		(A)

Ref. No.		Part No.	Part Name & Description	Pcs Set	Remarks
			INTEGRATED CIRCUITS		
IC1001		TLP521-YG		1	
		OR ON3111			
			TRANSISTORS		
Q1001	⚠	2SD1330		1	
Q1002		2SB976		1	
Q1003		2SB642		1	
Q1004	⚠	2SC3170		1	
	⚠	OR 2SC3310			
Q1006		2SD1273		1	
Q1007		2SD637		1	
Q1009		2SD636		1	
Q1010		2SB642		1	
Q1011		2SB644		1	
Q1012		2SB642		1	
Q1013		2SD638(Q,R)		1	
			DIODES		
D1001	⚠	S1VB40		1	
	⚠	OR 1G4B41			
D1002	⚠	ERB43-04		1	
	⚠	OR S1K40			
D1003-1005		MA165		3	
D1006		MA4130L	ZENER	1	
D1007		MA170		1	
D1008		MA165		1	
D1009	⚠	MA167		1	
D1010		ERB43-04		1	
		OR MA182			
		OR S1K40			
D1011		ERD29-02H3		1	
D1012		ERB43-04		1	
		OR MA182			
		OR S1K40			
D1013		MA4068M	ZENER	1	
D1014		MA165		1	
D1015		ERB81-004		1	
D1019		MA4051H	ZENER	1	
D1020		MA165		1	
D1021	⚠	MA4051H	ZENER	1	
D1022		MA4130L	ZENER	1	
D1023,1024		MA165		2	
D1026		MA4047	ZENER	1	
D1030		ERB43-04		1	
		OR S1K40			
			RESISTORS		
R1001		ERDS2TJ334	330K	1	
R1002	⚠	ERG3SJ333	METAL OXIDE 3W 33K	1	
	⚠	OR KRG3SJ333	METAL OXIDE 3W 33K		
R1003	⚠	ERD25FJ6R2	6.2	1	
R1004	⚠	ERD25FJ222	2.2K	1	
R1005	⚠	ERD25FJ152	1.5K	1	
R1006	⚠	ERD25FJ4R7	4.7	1	
R1008	⚠	ERD25FJ472	4.7K	1	
R1009		ERDS2TJ471	470	1	
R1010	⚠	ERD25FJ560	56	1	
R1011	⚠	ERD25FJ330	33	1	
R1012		ERDS2TJ331	330	1	
R1013		ERDS2TJ104	100K	1	
R1015		ERDS1TJ180	1/2W 18	1	
R1017		ERDS2TJ221	220	1	
R1018		ERDS2TJ562	5.6K	1	
R1019		ERDS2TJ103	10K	1	
R1020		ERDS2TJ562	5.6K	1	
R1021		ERDS2TJ221	220	1	
R1022		ERDS2TJ3R3	3.3	1	
R1023	⚠	ERDS1FJ1R0	POLYESTER 1/2W 1	1	
R1025	⚠	ERC12ZGK275	SOLID 1/2W 2.7M +-10%	1	
R1026		ERDS2TJ472	4.7K	1	
R1027,1028		ERDS2TJ104	100K	2	
R1029		ERDS2TJ103	10K	1	
R1033	⚠	ERD25FJ472	4.7K	1	
R1034		ERDS2TJ334	330K	1	
R1035	⚠	ERD25FJ150	15	1	
R1036	⚠	ERD25FJ220	22	1	
R1037		ERDS2TJ562	5.6K	1	
R1038		ERDS2TJ471	470	1	
R1039	⚠	ERD25FJ330	33	1	
R1040		ERDS2TJ333	33K	1	
R1041,1042	⚠	ERD2FCGP121	120 +-2%	2	
	⚠	OR ERD2FCG121	120 +-2%		
R1044		ERDS2TJ560	56	1	
R1045		ERDS2TJ473	47K	1	
			CAPACITORS		
C1001,1002	⚠	VCKS0004	CERAMIC 0.01	2	
	⚠	OR VCKS0005	CERAMIC 0.01		
C1003,1004	⚠	VCKS0001	CERAMIC 0.001	2	
C1005	⚠	ECEA2DS121M	ELECTROLYTIC 200V 120	1	
C1006	⚠	ECEA2EG4R7Y	ELECTROLYTIC 250V 4.7	1	
	⚠	OR KM250VB4R7	ELECTROLYTIC 250V 4.7		
C1007		ECEA1EG220S	ELECTROLYTIC 25V 22	1	
		OR KMA16VB-22	ELECTROLYTIC 16V 22		
C1008	⚠	VCKS0001	CERAMIC 0.001	1	
C1009	⚠	KM50VB-22	ELECTROLYTIC 50V 22	1	
C1010		ECEA1HG2R2S	ELECTROLYTIC 50V 2.2	1	
		OR KMA50VB-2R2	ELECTROLYTIC 50V 2.2		
C1011		ECQB1H153JZ	POLYESTER 50V 0.015 +-5%	1	
C1012		ECEA1HU470X	ELECTROLYTIC 50V 47	1	
		OR SXE50VB-68	ELECTROLYTIC 50V 68		
C1013,1014		ECEA1CU222X	ELECTROLYTIC 16V 2200	2	
		OR SXE16VB2200	ELECTROLYTIC 16V 2200		
C1015		ECEA1HU470X	ELECTROLYTIC 50V 47	1	
		OR SXE50VB-68	ELECTROLYTIC 50V 68		
C1016,1017		ECEA0JF102W	ELECTROLYTIC 6.3V 1000	2	
		OR			
		SXE6.3VB1200	ELECTROLYTIC 6.3V 1200		
C1019,1020		ECQB1H104JZ	CERAMIC 50V 0.1 +-5%	2	
C1021,1022		ECEA1HG100S	ELECTROLYTIC 50V 10	2	
		OR KMA16VB-10	ELECTROLYTIC 16V 10		
C1025		ECEA1CU222X	ELECTROLYTIC 16V 2200	1	
		OR SXE16VB2200	ELECTROLYTIC 16V 2200		
C1026		ECEA0JF102W	ELECTROLYTIC 6.3V 1000	1	
		OR			
		SXE6.3VB1200	ELECTROLYTIC 6.3V 1200		
C1027		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C1029		ECEA1HG100S	ELECTROLYTIC 50V 10	1	
		OR KMA16VB-10	ELECTROLYTIC 16V 10		
C1030		ECEA1HG100S	ELECTROLYTIC 50V 10	1	
		OR KM50VB-10	ELECTROLYTIC 50V 10		
C1031-1033		ECKW1H102KB5	CERAMIC 50V 0.001	3	
C1034		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C1035		ECKW1H102KB5	CERAMIC 50V 0.001	1	
C1039,1040		ECKW1H103ZF5	CERAMIC 50V 0.01	2	
			+80%-20%		
C1041		ECEA1AG101G	ELECTROLYTIC 10V 100	1	
		OR			
		KMA6.3VB-100	ELECTROLYTIC 6.3V 100		

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
C1042		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C1043		ECQM1H103KV	POLYESTER 50V 0.01	1	
		OR ECQM1H103KZ	POLYESTER 50V 0.01		
			COILS		
L1001	⚠	ELF18D314		1	
	⚠	OR VLQS0002			
L1002		VLQS11H560M	56 +-20%	1	
L1003		VLQS0006	22	1	
		OR VLQS9H220M	22		
L1004		VLQS0007	100	1	
		OR VLQS9H101K	100		
L1007		VLQS05R4R7K	4.7	1	
L1008		VLQS66R220K	22	1	
			PIN HEADER		
P1004		VJPS0013	5P	1	
P1006		VJPS0012	4P	1	
			FUSE		
F1001	⚠	XBA1C16NU100	1.6A	1	
			TRANSFORMER		
T1001	⚠	ETS35K80A		1	
			MISCELLANEOUS		
		VSCS0543	SHIELD CASE	1	
			MISCELLANEOUS		
		TJC6320	FUSE HOLDER	2	
		TMM7443	CLAMPER	1	
		VMTS0035	CUSHION	2	
		VMZS0130	INSULATOR PLATE	1	
		VSCS0403	HEAT SINK PLATE	1	
		VSCS0542	SHIELD CASE	1	
		VSCS0544	SHIELD CASE	1	
			POWER SUPPLY C.B.A		(B)
			INTEGRATED CIRCUITS		
IC1001		TLP521-YG		1	
		OR ON3111			
			TRANSISTORS		
Q1001	⚠	2SD1330(R,S,T)		1	
Q1002		2SB976		1	
Q1003		2SB642		1	
Q1004	⚠	2SC3170		1	
	⚠	OR 2SC3310			
Q1006		2SD1273		1	
Q1007		2SD637		1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
Q1009		2SD636		1	
Q1010		2SB642		1	
Q1011		2SB644		1	
Q1012		2SB642		1	
Q1013		2SD638(Q,R)		1	
			DIODES		
D1001	⚠	S1VB40		1	
	⚠	OR 1G4B41			
D1002	⚠	D1R100		1	
D1003-1005		MA165		3	
D1006		MA4130H		1	
D1007		MA170		1	
D1008		MA165		1	
D1009	⚠	MA167		1	
D1010		D1K40		1	
		OR ERB43-04			
		OR MA182			
D1011		ERD29-02H3		1	
D1012		D1K40		1	
		OR ERB43-04			
		OR MA182			
D1013		MA4068M	ZENER	1	
D1014		MA165		1	
D1015		ERB81-004		1	
D1019		MA4051M	ZENER	1	
D1020		MA165		1	
D1021	⚠	MA4051M	ZENER	1	
D1022		MA4130L	ZENER	1	
D1023,1024		MA165		2	
D1026		MA4501	ZENER	1	
		OR RD5.1EB	ZENER		
		OR EQA02-05	ZENER		
D1030		D1K40		1	
		OR ERB43-04			
D7531,7532		MA4068	ZENER	2	
			RESISTORS		
R1001		ERDS2TJ334	330K	1	
R1002	⚠	ERG3SJ333	METAL OXIDE 3W 33K	1	
	⚠	OR KRG3SJ333	METAL OXIDE 3W 33K		
R1003	⚠	ERD25FJ6R2	6.2	1	
R1004	⚠	ERD25FJ222	2.2K	1	
R1005	⚠	ERD25FJ152	1.5K	1	
R1006	⚠	ERD25FJ4R7	4.7	1	
R1008	⚠	ERD25FJ472	4.7K	1	
R1009		ERDS2TJ471	470	1	
R1010	⚠	ERD25FJ560	56	1	
R1011	⚠	ERD25FJ330	33	1	
R1012		ERDS2TJ331	330	1	
R1013		ERDS2TJ104	100K	1	
R1015		ERDS1TJ180	1/2W 18	1	
R1017		ERDS2TJ221	220	1	
R1018		ERDS2TJ562	5.6K	1	
R1019		ERDS2TJ103	10K	1	
R1020		ERDS2TJ562	5.6K	1	
R1021		ERDS2TJ221	220	1	
R1022		ERDS2TJ3R3	3.3	1	
R1023	⚠	ERDS1FJ1R0	POLYESTER 1/2W 1	1	
R1025	⚠	ERC12ZGK275	SOLID 1/2W 2.7M +-10%	1	
R1026		ERDS2TJ472	4.7K	1	
R1027,1028		ERDS2TJ104	100K	2	
R1029		ERDS2TJ103	10K	1	
R1033	⚠	ERD25FJ472	4.7K	1	
R1034		ERDS2TJ334	330K	1	
R1035	⚠	ERD25FJ150	15	1	
R1036	⚠	ERD25FJ220	22	1	
R1037		ERDS2TJ562	5.6K	1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
R1038		ERDS2TJ471	470	1	
R1039	⚠	ERD25FJ330	33	1	
R1040		ERDS2TJ333	33K	1	
R1041,1042	⚠	ERD2FCGD121	120 +-2%	2	
	⚠	OR ERD2FCGP121	120 +-2%		
R1044		ERDS2TJ560	56	1	
R1045		ERDS2TJ473	47K	1	
			CAPACITORS		
C1001,1002	⚠	VCKS0004	CERAMIC 0.01	2	
	⚠	OR VCKS0005	CERAMIC 0.01		
C1003,1004	⚠	VCKS0001	CERAMIC 0.001	2	
C1005	⚠	ECEA2DS121M	ELECTROLYTIC 200V 120	1	
C1006	⚠	ECEA2EG4R7Y	ELECTROLYTIC 250V 4.7	1	
	⚠	OR KM250VB4R7	ELECTROLYTIC 250V 4.7		
C1007		ECEA1EG220S	ELECTROLYTIC 25V 22	1	
		OR KMA16VB-22	ELECTROLYTIC 16V 22		
C1008	⚠	VCKS0001	CERAMIC 0.001	1	
C1009	⚠	KM50VB-22	ELECTROLYTIC 50V 22	1	
C1010		ECEA1HG2R2S	ELECTROLYTIC 50V 2.2	1	
		OR KMA50VB-2R2	ELECTROLYTIC 50V 2.2		
C1011		ECQB1H153JZ	POLYESTER 50V 0.015 +-5%	1	
C1012		ECEA1HU470X	ELECTROLYTIC 50V 47	1	
		OR SXE50VB-68	ELECTROLYTIC 50V 68		
C1013,1014		ECEA1CU222X	ELECTROLYTIC 16V 2200	2	
		OR SXE16VB2200	ELECTROLYTIC 16V 2200		
C1015		ECEA1HU470X	ELECTROLYTIC 50V 47	1	
		OR SXE50VB-68	ELECTROLYTIC 50V 68		
C1016,1017		ECEA0JF102W	ELECTROLYTIC 6.3V 1000	2	
		OR			
		SXE6.3VB1200	ELECTROLYTIC 6.3V 1200		
C1019		ECQV05104JC	POLYESTER 50V 0.1 +-5%	1	
		OR ECQV05104JZ	POLYESTER 50V 0.1 +-5%		
		OR ECQV1H104JZ	POLYESTER 50V 0.1 +-5%		
C1020		ECQV05104JC	POLYESTER 50V 0.1 +-5%	1	
		OR ECQV05104JZ	POLYESTER 50V 0.1 +-5%		
		OR ECQV1H104JZ	POLYESTER 50V 0.1 +-5%		
C1021		KMA16VB-10	ELECTROLYTIC 16V 10	1	
C1022		ECEA1HG100S	ELECTROLYTIC 50V 10	1	
		OR KMA16VB-10	ELECTROLYTIC 16V 10		
C1025		ECEA1CU222X	ELECTROLYTIC 16V 2200	1	
		OR SXE16VB2200	ELECTROLYTIC 16V 2200		
C1026		ECEA0JF102W	ELECTROLYTIC 6.3V 1000	1	
		OR			
		SXE6.3VB1200	ELECTROLYTIC 6.3V 1200		
C1027		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C1029		ECEA1HG100S	ELECTROLYTIC 50V 10	1	
		OR KMA16VB-10	ELECTROLYTIC 16V 10		
C1030		ECEA1HG100S	ELECTROLYTIC 50V 10	1	
		OR KM50VB-10	ELECTROLYTIC 50V 10		
C1031-1033		ECKW1H102KB5	CERAMIC 50V 0.001	3	
C1034		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C1035		ECKW1H102KB5	CERAMIC 50V 0.001	1	
C1039,1040		ECKW1H103ZF5	CERAMIC 50V 0.01	2	
			+80%-20%		
C1041		ECEA1AG101S	ELECTROLYTIC 6.3V 100	1	
		OR KM6.3VB-100	ELECTROLYTIC 6.3V 100		
C1042		ECKW1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
C1043		ECQM1H103KV	POLYESTER 50V 0.01	1	
		OR ECQM1H103KZ	POLYESTER 50V 0.01		

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
			COILS		
L1001	⚠	ELF18D314		1	
	⚠	OR VLQS0002			
L1002		VLQS11H560K	56	1	
		OR VLQS11H560M	56 +-20%		
L1003		VLQS9H220M	22	1	
L1004		VLQS0007	100	1	
		OR VLQS9H101K	100		
L1007		VLQS05R4R7K	4.7	1	
L1008		VLQS66R220K	22	1	
			PIN HEADER		
P1004		VJPS0013	5P	1	
P1005		VJPS0022	7P	1	
P1006		VJPS0012	4P	1	
			FUSE		
F1001	⚠	XBA1C16NU100	1.6A	1	
			TRANSFORMER		
T1001	⚠	ETS35K80A		1	
			MISCELLANEOUS		
		TJC6320	FUSE HOLDER	2	
		VBM76680	BARRIER	1	
		VMTS0035	CUSHION	1	
		VMTS0044	CUSHION	1	
		VMZS0130	INSULATOR PLATE	1	
		VQLS0768	FUSE CAUTION LABEL	1	
		VSCS0403	HEAT SINK PLATE	1	
		VSCS0517	SHIELD CASE	1	
		VSCS0542	SHIELD CASE	1	
		VSCS0543	SHIELD CASE	1	
		VSCS0544	SHIELD CASE	1	
			AUDIO C.B.A		(B)
			INTEGRATED CIRCUITS		
IC4002		AN6209K		1	
IC4003		AN90C21		1	
IC4004		HA12045		1	
IC4006		AN6209K		1	
IC4007		AN90C21		1	
IC4008		TA7348P		1	
IC4009		AN6552		1	
		OR BA4558			
		OR TA75557P			
			TRANSISTORS		
Q4001		2SD636(R,S)		1	
Q4002		2SD637(Q,R,S)		1	
Q4003,4004		2SD636(Q,R,S)		2	
Q4005,4006		2SB641(Q,R)		2	
Q4007,4008		2SD636(Q,R,S)		2	
Q4009		2SB641(R,S)		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
Q4010,4011	2SD636(Q,R,S)		2	
Q4012,4013	2SD1330(R,S,T)		2	
Q4015	2SD636(Q,R,S)		1	
Q4016,4017	2SB641(R,S)		2	
Q4018,4019	2SD636(Q,R,S)		2	
Q4020	2SB641(R,S)		1	
		RESISTORS		
R4001	ERDS2TJ333	33K	1	
R4002	ERDS2TJ181	180	1	
R4003	ERDS2TJ101	100	1	
R4004	ERDS2TJ331	330	1	
R4005	EVN38CA00B53	VARIABLE 5K	1	
R4006	ERDS2TJ124	120K	1	
R4007	ERDS2TJ103	10K	1	
R4008,4009	ERDS2TJ472	4.7K	2	
R4010	EVN38CA00B54	VARIABLE 50K	1	
R4011	ERDS2TJ332	3.3K	1	
R4012	ERDS2TJ152	1.5K	1	
R4013	ERDS2TJ182	1.8K	1	
R4014	ERDS2TJ333	33K	1	
R4015	ERDS2TJ225	2.2M	1	
R4016	ERDS2TJ123	12K	1	
R4017	ERDS2TJ101	100	1	
R4018	ERDS2TJ821	820	1	
R4019	ERDS2TJ822	8.2K	1	
R4020	ERDS2TJ223	22K	1	
R4021	ERDS2TJ102	1K	1	
R4022	ERDS2TJ223	22K	1	
R4023	ERDS2TJ183	18K	1	
R4024	ERDS2TJ271	270	1	
R4025	EVN38CA00B24	VARIABLE 20K	1	
R4026	ERDS2TJ101	100	1	
R4027	ERDS2TJ331	330	1	
R4028	ERDS2TJ271	270	1	
R4029	ERDS2TJ152	1.5K	1	
R4030	ERDS2TJ272	2.7K	1	
R4031	ERDS2TJ332	3.3K	1	
R4032	ERDS2TJ330	33	1	
R4033	ERDS2TJ473	47K	1	
R4034	ERDS2TJ682	6.8K	1	
R4035	ERDS2TJ104	100K	1	
R4036	ERDS2TJ101	100	1	
R4037	ERDS2TJ104	100K	1	
R4038	ERDS2TJ103	10K	1	
R4039	ERDS2TJ100	10	1	
R4044,4045	ERDS2TJ102	1K	2	
R4051	ERDS2TJ333	33K	1	
R4052	ERDS2TJ181	180	1	
R4053	ERDS2TJ101	100	1	
R4054	ERDS2TJ331	330	1	
R4055	EVN38CA00B53	VARIABLE 5K	1	
R4056	ERDS2TJ124	120K	1	
R4057	ERDS2TJ103	10K	1	
R4058,4059	ERDS2TJ472	4.7K	2	
R4060	EVN38CA00B54	VARIABLE 50K	1	
R4061	ERDS2TJ332	3.3K	1	
R4062	ERDS2TJ152	1.5K	1	
R4063	ERDS2TJ182	1.8K	1	
R4064	ERDS2TJ333	33K	1	
R4065	ERDS2TJ225	2.2M	1	
R4066	ERDS2TJ123	12K	1	
R4067	ERDS2TJ101	100	1	
R4068	ERDS2TJ821	820	1	
R4069	ERDS2TJ822	8.2K	1	
R4070	ERDS2TJ223	22K	1	
R4071	ERDS2TJ102	1K	1	
R4072	ERDS2TJ223	22K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R4073	ERDS2TJ183	18K	1	
R4074	ERDS2TJ271	270	1	
R4075	EVN38CA00B24	VARIABLE 20K	1	
R4076	ERDS2TJ101	100	1	
R4077	ERDS2TJ331	330	1	
R4078	ERDS2TJ271	270	1	
R4079	ERDS2TJ152	1.5K	1	
R4080	ERDS2TJ272	2.7K	1	
R4081	ERDS2TJ332	3.3K	1	
R4082	ERDS2TJ330	33	1	
R4083	ERDS2TJ473	47K	1	
R4084	ERDS2TJ682	6.8K	1	
R4085	ERDS2TJ104	100K	1	
R4086	ERDS2TJ101	100	1	
R4087	ERDS2TJ104	100K	1	
R4088	ERDS2TJ103	10K	1	
R4089	ERDS2TJ100	10	1	
R4101	ERDS2TJ222	2.2K	1	
R4102	ERDS2TJ103	10K	1	
R4103	ERDS2TJ562	5.6K	1	
R4104	ERDS2TJ822	8.2K	1	
R4105	ERDS2TJ220	22	1	
R4106	ERDS2TJ333	33K	1	
R4107	ERDS2TJ103	10K	1	
R4108	ERDS2TJ472	4.7K	1	
R4109	ERDS2TJ223	22K	1	
R4110-4112	ERDS2TJ562	5.6K	3	
R4113,4114	ERDS2TJ273	27K	2	
R4115,4116	ERDS2TJ473	47K	2	
R4117-4119	ERDS2TJ562	5.6K	3	
R4120	ERDS2TJ104	100K	1	
R4121	ERDS2TJ102	1K	1	
R4122	ERDS2TJ392	3.9K	1	
R4123,4124	ERDS2TJ473	47K	2	
R4126,4127	ERDS2TJ822	8.2K	2	
R4128	ERDS2TJ681	680	1	
R4129-4135	ERDS2TJ223	22K	7	
R4136,4137	ERDS2TJ103	10K	2	
R4138,4139	ERDS2TJ473	47K	2	
R4140,4141	ERDS2TJ222	2.2K	2	
		CAPACITORS		
C4002	ECKW1H471KB5	CERAMIC 50V 470P	1	
C4003	ECEA50M1R	ELECTROLYTIC 50V 1	1	
C4004	ECKW1H471KB5	CERAMIC 50V 470P	1	
C4005	ECEA50ZR33	ELECTROLYTIC 50V 0.33	1	
C4006	ECEA50ZR22	ELECTROLYTIC 50V 0.22	1	
C4007	ECEA1CS220	ELECTROLYTIC 16V 22	1	
C4008	ECQB1H333JZ	POLYESTER 50V 0.033 +-5%	1	
	OR ECQV05333JZ	POLYESTER 50V 0.033 +-5%		
	OR ECQV1H333JZ	POLYESTER 50V 0.033 +-5%		
C4009	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4010	ECEA50ZR33	ELECTROLYTIC 50V 0.33	1	
C4011	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4012	ECEA1HSR22	ELECTROLYTIC 50V 0.22	1	
C4013	ECEA0JS101	ELECTROLYTIC 6.3V 100	1	
C4014	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4015	ECKW1H102KB5	CERAMIC 50V 0.001	1	
C4016	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4017	ECEA1CS220	ELECTROLYTIC 16V 22	1	
C4018	ECEA1CS330	ELECTROLYTIC 16V 33	1	
C4019	ECEA1HS010	ELECTROLYTIC 50V 1	1	
C4020	ECQV05563JZ	POLYESTER 50V 0.056 +-5%	1	
	OR ECQV1H563JZ	POLYESTER 50V 0.056 +-5%		
C4021	ECEA1AS330	ELECTROLYTIC 10V 33	1	
C4022,4023	ECEA50Z0R1	ELECTROLYTIC 50V 0.1	2	
C4024	ECEA1AS330	ELECTROLYTIC 10V 33	1	
C4025	VCYW1C104MX	CERAMIC 16V 0.1	1	

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
		+-20%		
C4026	ECEA1CKN100	ELECTROLYTIC 16V 10	1	
C4027	ECEA1HS010	ELECTROLYTIC 50V 1	1	
C4028	ECEA1CK100	ELECTROLYTIC 16V 10	1	
C4029	ECEA1CKN100	ELECTROLYTIC 16V 10	1	
C4030	ECQB1H333JZ	POLYESTER 50V 0.033 +-5%	1	
	OR ECQV05333JZ	POLYESTER 50V 0.033 +-5%		
	OR ECQV1H333JZ	POLYESTER 50V 0.033 +-5%		
C4031	ECQB1H472JZ	POLYESTER 50V 0.0047 +-5%	1	
	OR ECQM1H472JV	POLYESTER 50V 0.0047 +-5%		
C4032	ECEA1EKL4R7	ELECTROLYTIC 25V 4.7	1	
C4033	ECEA1CKN100	ELECTROLYTIC 16V 10	1	
C4034	ECQV05473JZ	POLYESTER 50V 0.047 +-5%	1	
	OR ECQV1H473JZ	POLYESTER 50V 0.047 +-5%		
C4035	ECQB1H183JZ	POLYESTER 50V 0.018 +-5%	1	
	OR ECQV05183JZ	POLYESTER 50V 0.018 +-5%		
	OR ECQV1H183JZ	POLYESTER 50V 0.018 +-5%		
C4036	ECEA1HK010	ELECTROLYTIC 50V 1	1	
C4037	ECSF1CD224KD	THERMISTER 16V 0.22	1	
C4038	ECSF1CD684KD	THERMISTER 16V 0.68	1	
C4039	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C4051	ECEA0JK221	ELECTROLYTIC 6.3V 220	1	
C4052	ECKW1H471KB5	CERAMIC 50V 470P	1	
C4053	ECEA50M1R	ELECTROLYTIC 50V 1	1	
C4054	ECKW1H471KB5	CERAMIC 50V 470P	1	
C4055	ECEA50ZR33	ELECTROLYTIC 50V 0.33	1	
C4056	ECEA50ZR22	ELECTROLYTIC 50V 0.22	1	
C4057	ECEA1CS220	ELECTROLYTIC 16V 22	1	
C4058	ECQB1H333JZ	POLYESTER 50V 0.033 +-5%	1	
	OR ECQV05333JZ	POLYESTER 50V 0.033 +-5%		
	OR ECQV1H333JZ	POLYESTER 50V 0.033 +-5%		
C4059	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4060	ECEA50ZR33	ELECTROLYTIC 50V 0.33	1	
C4061	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4062	ECEA1HSR22	ELECTROLYTIC 50V 0.22	1	
C4063	ECEA0JS101	ELECTROLYTIC 6.3V 100	1	
C4064	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4065	ECKW1H102KB5	CERAMIC 50V 0.001	1	
C4066	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4067	ECEA1CS220	ELECTROLYTIC 16V 22	1	
C4068	ECEA1CS330	ELECTROLYTIC 16V 33	1	
C4069	ECEA1HS010	ELECTROLYTIC 50V 1	1	
C4070	ECQV05563JZ	POLYESTER 50V 0.056 +-5%	1	
	OR ECQV1H563JZ	POLYESTER 50V 0.056 +-5%		
C4071	ECEA1AS330	ELECTROLYTIC 10V 33	1	
C4072,4073	ECEA50Z0R1	ELECTROLYTIC 50V 0.1	2	
C4074	ECEA1AS330	ELECTROLYTIC 10V 33	1	
C4075	VCYW1C104MX	CERAMIC 16V 0.1	1	
		+-20%		
C4076	ECEA1CKN100	ELECTROLYTIC 16V 10	1	
C4077	ECEA1HS010	ELECTROLYTIC 50V 1	1	
C4078	ECEA1CK470	ELECTROLYTIC 16V 47	1	
C4079	ECEA1CKN100	ELECTROLYTIC 16V 10	1	
C4080	ECQB1H333JZ	POLYESTER 50V 0.033 +-5%	1	
	OR ECQV05333JZ	POLYESTER 50V 0.033 +-5%		
	OR ECQV1H333JZ	POLYESTER 50V 0.033 +-5%		
C4081	ECQB1H472JZ	POLYESTER 50V 0.0047 +-5%	1	
	OR ECQM1H472JV	POLYESTER 50V 0.0047 +-5%		
C4082	ECEA1EKL4R7	ELECTROLYTIC 25V 4.7	1	
C4083	ECEA1CKN100	ELECTROLYTIC 16V 10	1	
C4084	ECQV05473JZ	POLYESTER 50V 0.047 +-5%	1	
	OR ECQV1H473JZ	POLYESTER 50V 0.047 +-5%		
C4085	ECQB1H183JZ	POLYESTER 50V 0.018 +-5%	1	
	OR ECQV05183JZ	POLYESTER 50V 0.018 +-5%		
	OR ECQV1H183JZ	POLYESTER 50V 0.018 +-5%		
C4086	ECEA1HK010	ELECTROLYTIC 50V 1	1	
C4087	ECSF1CD224KD	TANTALUM 16V 0.22	1	
C4088	ECSF1CD684KD	TANTALUM 16V 0.68	1	
C4089	ECKW1H103ZF5	CERAMIC 50V 0.01	1	

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
		+80%-20%		
C4101	ECEA1CK101	ELECTROLYTIC 16V 100	1	
C4102	ECEA1CS470	ELECTROLYTIC 16V 47	1	
C4103	ECEA1HSR47	ELECTROLYTIC 50V 0.47	1	
C4104,4105	ECKW1H102KB5	CERAMIC 50V 0.001	2	
C4106	ECEA1CS220	ELECTROLYTIC 16V 22	1	
C4107	VCYW1E103KX	CERAMIC 25V 0.01	1	
C4108	VCYW1E333KX	CERAMIC 50V 0.033	1	
C4109	ECQP1332JZ	POLYESTER 100V 0.0033 +-5%	1	
C4110,4111	ECRHC060G11	TRIMMER 60P	2	
	OR ECV1ZW60X64	TRIMMER 60P		
	OR VCVSAW60X1R	TRIMMER 60P		
C4112	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4113	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C4114	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4115	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C4116	ECEA1CS100	ELECTROLYTIC 16V 10	1	
C4117	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C4118	ECCW1H820J5	CERAMIC 50V 82P +-5%	1	
C4119	ECEA1ES4R7	ELECTROLYTIC 25V 4.7	1	
C4120,4121	ECEA1CS100	ELECTROLYTIC 16V 10	2	
C4122	ECEA1ES4R7	ELECTROLYTIC 25V 4.7	1	
	OR ECEA1EU4R7	ELECTROLYTIC 25V 4.7		
C4123	ECEA1HS2R2	ELECTROLYTIC 50V 2.2	1	
C4124	VCYW1E333KX	CERAMIC 50V 0.033	1	
		FILTERS		
FL4001,4002	VLFS0002		2	
		COILS		
L4001	VLQS78F222K	2.2M	1	
L4002	VLQS67F222K	2.2M	1	
L4003	VLQS78F222K	2.2M	1	
L4004	VLQS67F222K	2.2M	1	
L4005	VLQS66F471K	470	1	
L6006	VLQS05R471K	470	1	
	OR VLQS66R471K	470		
		PIN HEADER		
P4001	VJPS0104	8P	1	
P4005	VJPS0098	2P	1	
		TRANSFORMER		
T4001	ELM7Q020E		1	
		MISCELLANEOUS		
	VJFS0009	SPEED CLAMPER	1	
	VMTS0035	CUSHION	6	
	VSCS0439	SHIELD CASE	1	
	VSCS0440	SHIELD CASE	1	
	VSCS0441	SHIELD CASE	1	
		OPERATION C.B.A		

Ref. No	Part No.	Part Name & Description	Pcs Set	Remarks
		DIODES		
D6301,6302	MA165		2	
D6304-6308	MA165		5	
		RESISTOR		
R6301	ERDS2TJ392	3.9K	1	
		SWITCHES		
SW6301-6310	EVQ-QJ104K	PUSH	10	
		MISCELLANEOUS		
	VSCS0478	SHIELD CASE	1	
		CHANNEL SELECT C.B.A		
		INTEGRATED CIRCUITS		
IC7301	UPC1363C		1	
	OR UPC1363CA			
IC7302	AN5070		1	
		TRANSISTORS		
Q7301	2SB642(Q,R,S)		1	
Q7302-7304	2SD637(Q,R,S)		3	
Q7306,7307	2SD637(Q,R,S)		2	
Q7311	2SD637(R,S)		1	
Q7312	2SD637(Q,R,S)		1	
Q7313	2SB642(Q,R,S)		1	
Q7314	2SD637(Q,R,S)		1	
		DIODES		
D7301-7314	MA166C		14	
D7315-7329	MA166		15	
D7331,7332	MA165		2	
D7333	MA166C		1	
D7335	MA166		1	
		RESISTORS		
R7301	ERDS2TJ563	56K	1	
R7304	ERDS2TJ273	27K	1	
R7305	ERDS2TJ563	56K	1	
R7306	ERDS2TJ683	68K	1	
R7307	ERDS2TJ103	10K	1	
R7310,7311	ERDS2TJ562	5.6K	2	
R7312,7313	ERDS2TJ472	4.7K	2	
R7314	ERDS2TJ562	5.6K	1	
R7315	ERDS2TJ333	33K	1	
R7316	ERDS2TJ472	4.7K	1	
R7317	ERDS2TJ104	100K	1	
R7318	ERDS2TJ224	220K	1	
R7319	ERDS2TJ561	560	1	
R7320	ERDS2TJ103	10K	1	
R7321	ERDS2TJ473	47K	1	
R7322	ERDS2TJ223	22K	1	
R7329,7330	ERDS2TJ104	100K	2	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R7331	ERDS2TJ153	15K	1	
R7332,7333	ERDS2TJ563	56K	2	
R7334	ERDS2TJ474	470K	1	
R7335	ERDS2TJ154	150K	1	
R7337	ERDS2TJ223	22K	1	
R7338	ERDS2TJ103	10K	1	
R7339	ERDS2TJ472	4.7K	1	
R7340-7342	ERDS2TJ104	100K	3	
R7343	ERDS2TJ105	1M	1	
R7348	ERDS2TJ563	56K	1	
R7349	ERDS2TJ153	15K	1	
R7350,7351	ERDS2TJ223	22K	2	
R7352	ERDS2TJ3R3	3.3	1	
VR7301	EWELJ4A00B24	VARIABLE 20K	1	
		CAPACITORS		
C7301	ECEB1CK100	ELECTROLYTIC 16V 10	1	
C7302	ECQM1H223KV	POLYESTER 50V 0.022	1	
C7303	VCYST16103NY	CERAMIC 16V 0.01 +-30%	1	
C7306,7307	VCYST25332NX	CERAMIC 25V 0.0033 +-30%	2	
C7308	ECEA1HN4R7S	ELECTROLYTIC 50V 4.7	1	
C7309	ECCW1H101JC5	CERAMIC 50V 100P +-5%	1	
C7310	ECEA1HK010	ELECTROLYTIC 50V 1	1	
C7311	ECQM1H103KV	POLYESTER 50V 0.01	1	
C7312	ECEA1HK010	ELECTROLYTIC 50V 1	1	
C7315	ECQM1H103KV	POLYESTER 50V 0.01	1	
C7316	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7317	ECQM1H103KV	POLYESTER 50V 0.01	1	
		PIN HEADERS		
P7301	VJPS0015	10P	1	
P7302	VJPS0012	4P	1	
		SWITCH		
SW7301	VSSS0025	SELECT	1	
		PROGRAMMABLE TIMER C.B.A		(A)
		INTEGRATED CIRCUITS		
IC7501	UPD7538C-021		1	
		TRANSISTORS		
Q7501	2SB641(Q,R,S)		1	
Q7502	2SD636(Q,R,S)		1	
		DIODES		
DX7202	VCRS0038	COMPLEX COMPONENT	1	
DX7501	VCRS0037	COMPLEX COMPONENT	1	
DX7503-7505	VCRS0038	COMPLEX COMPONENT	3	
D7215-7228	LN31GCPHL-U	LED	14	
D7501	MA165		1	
	OR 1SS119			
D7502	MA1091	ZENER	1	
	OR MA4091	ZENER		
	OR RD9.1EB	ZENER		
D7503-7509	MA166		7	

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
D7512-7515	MA166		4	
		RESISTORS		
R7501,7502	ERDS2TJ473	47K	2	
R7503,7504	ERDS2TJ223	22K	2	
R7505	ERDS2TJ222	2.2K	1	
R7508-7510	ERDS2TJ223	22K	3	
R7511	ERDS2TJ473	47K	1	
R7512,7513	ERDS2TJ223	22K	2	
R7517-7523	ERDS2TJ221	220	7	
R7524	ERDS2TJ472	4.7K	1	
R7525,7526	ERDS2TJ331	330	2	
R7527,7528	ERDS2TJ472	4.7K	2	
		CAPACITORS		
C7501	ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
C7502	ECKW1H223ZF5	CERAMIC 50V 0.022	1	
		+80%-20%		
C7503	ECEB1HK010	ELECTROLYTIC 50V 1	1	
C7504	ECEA1CK100	ELECTROLYTIC 16V 10	1	
	OR ECEA1CS100	ELECTROLYTIC 16V 10		
C7505	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C7506,7507	VCYSARH101KB	CERAMIC 50V 100P	2	
C7508	VCYSARH102KB	CERAMIC 50V 0.001	1	
C7509	VCYSARH471KB	CERAMIC 50V 470P	1	
C7510	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C7511	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7514	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C7520	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C7521	ECKF1H103ZV	CERAMIC 50V 0.01	1	
		+80%-20%		
		COIL		
L7501	VLQS05R4R7K	4.7	1	
		CRYSTALS OSCILLATOR		
X7501	VSXS0007		1	
	OR VSXS0008			
		SWITCHES		
SW7201-7214	EVQQSR05K	PUSH	14	
SW7502-7506	EVQ-QJ104K	PUSH	5	
SW7901-7903	EVQ-QJ104K	PUSH	3	
		MISCELLANEOUS		
	VGMS0223	DISPLAY TUBE HOLDER	1	
	VMDS0185	LED HOLDER	2	
	VSCS0304	GROUNDING PLATE	1	
DP7501	VSZS0023	DISPLAY TUBE	1	
		PROGRAMMABLE TIMER C.B.A		(B)

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
		INTEGRATED CIRCUITS		
IC7501	UPD7538C-021		1	
		TRANSISTORS		
Q7502	2SD636(Q,R,S)		1	
		DIODES		
DX7201	VCRS0037	COMPLEX COMPONENT	1	
DX7202	VCRS0038	COMPLEX COMPONENT	1	
DX7503-7505	VCRS0038	COMPLEX COMPONENT	3	
D7215-7228	LN31GCPHL-U	LED	14	
D7502	MA1091	ZENER	1	
	OR MA4091	ZENER		
	OR RD9.1EB	ZENER		
D7503-7517	MA166		15	
D7542,7543	MA166		2	
D7545	MA1200	ZENER	1	
	OR MA4200	ZENER		
	OR RD20EB	ZENER		
D7901	LN31GCPHLM	LED	1	
		RESISTORS		
R7228	ERDS2TJ102	1K	1	
R7501,7502	ERDS2TJ103	10K	2	
R7505	ERDS2TJ222	2.2K	1	
R7508	ERDS2TJ682	6.8K	1	
R7509,7510	ERDS2TJ223	22K	2	
R7511	ERDS2TJ473	47K	1	
R7512-7515	ERDS2TJ223	22K	4	
R7516	ERDS2TJ224	220K	1	
R7518	ERDS2TJ221	220	1	
R7521,7522	ERDS2TJ102	1K	2	
R7524	ERDS2TJ472	4.7K	1	
R7525,7526	ERDS2TJ331	330	2	
R7527	ERDS2TJ472	4.7K	1	
R7905	ERDS2TJ271	270	1	
		CAPACITORS		
C7501	ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
C7502	ECQV05224JZ	POLYESTER 50V 0.22 +-5%	1	
	OR ECQV1H224JZ	POLYESTER 50V 0.22 +-5%		
C7503	ECEB1HK010	ELECTROLYTIC 50V 1	1	
C7505	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C7506,7507	VCYSARH101KB	CERAMIC 50V 100P	2	
C7508	VCYSARH102KB	CERAMIC 50V 0.001	1	
C7510	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C7511	ECKW1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
C7514	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C7520	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
		COIL		
L7501	VLQS05R4R7K	4.7	1	
		CRYSTALS OSCILLATOR		
X7501	VSXS0007		1	
	OR VSXS0008			

Ref. No.		Part No.	Part Name & Description	Pcs Set	Remarks
			SWITCHES		
SW7201-7214		EVQQSR05K	PUSH	14	
SW7502-7507		EVQ-QJ104K	PUSH	6	
SW7901-7903		EVQ-QJ104K	PUSH	3	
SW7904		VES0198	SLIDE	1	
		OR VSSS0005	SLIDE		
SW7905		VSSS0032	SLIDE	1	
			MISCELLANEOUS		
		VGTS0163	SELECT SWITCH KNOB	1	
		VMDS0185	LED HOLDER	2	
		VMDS0223	DISPLAY TUBE HOLDER	1	
		VMXS0036	LED SPACER	1	
		VSCS0304	GROUNDING PLATE	1	
DP7501		VSZS0023	DISPLAY TUBE	1	
			CAPSTAN MOTOR DRIVE C.B.A		
			INTEGRATED CIRCUITS		
IC2601		AN3821K		1	
		OR AN3822K			
			RESISTORS		
R2601	⚠	ERX12ANJR68	METAL OXIDE 1/2W 0.68	1	
	⚠	OR ERX12SJR68	METAL OXIDE 1/2W 0.068 +-5%		
R2602		ERDS2TJ102	1K	1	
R2603		ERDS2TJ392	3.9K	1	
R2605		ERDS2TJ181	180	1	
R2606-2608		ERDS2TJ224	220K	3	
			CAPACITORS		
C2601		ECEA1CK101	ELECTROLYTIC 16V 100	1	
C2602		ECQM1H473KV	POLYESTER 50V 0.047	1	
		OR ECQM1H473KZ	POLYESTER 50V 0.047		
C2603		ECEA1HK010	ELECTROLYTIC 50V 1	1	
C2604-2606		ECEA1EKN2R2	ELECTROLYTIC 25V 2.2	3	
C2607-2609		ECKF1H472ZF	CERAMIC 50V 0.0047	3	
			+80%-20%		
			PIN HEADER		
P2601		VJPS0116	8P	1	
			MISCELLANEOUS		
		T18S	FASTENER	1	
			HEAD AMP UNIT		
			INTEGRATED CIRCUITS		
IC3501		AN3220K		1	
IC3502		AN3310K		1	

Ref. No		Part No.	Part Name & Description	Pcs Set	Remarks
			TRANSISTORS		
Q3502		2SC2206		1	
Q3503,3504		2SC2021M(Q,R,S)		2	
		OR			
		2SD636(Q,R,S)			
			RESISTORS		
R3501		ERDS2TJ681	680	1	
R3502		ERDS2TJ122	1.2K	1	
R3503		ERDS2TJ151	150	1	
R3504		ERDS2TJ222	2.2K	1	
R3505-3508		ERDS2TJ100	10	4	
R3509-3512		ERDS2TJ102	1K	4	
R3513		ERDS2TJ681	680	1	
R3514		ERDS2TJ821	820	1	
R3515		ERDS2TJ561	560	1	
R3516		ERDS2TJ821	820	1	
R3517		ERDS2TJ152	1.5K	1	
R3518		ERDS2TJ222	2.2K	1	
R3519,3520		ERDS2TJ102	1K	2	
R3521		ERDS2TJ271	270	1	
R3522		ERDS2TJ122	1.2K	1	
R3523		ERDS2TJ102	1K	1	
R3524		ERDS2TJ223	22K	1	
R3525		ERDS2TJ683	68K	1	
R3526		ERDS2TJ392	3.9K	1	
R3527		ERDS2TJ223	22K	1	
			CAPACITORS		
C3501		ECKZ1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
		OR ECKZ1H103ZV	CERAMIC 50V 0.01		
			+80%-20%		
C3502		ECCZ1H180JC	CERAMIC 50V 18P +-5%	1	
		OR			
		ECCZ1H180JC6	CERAMIC 50V 18P +-5%		
C3504-3507		ECKZ1H103ZF5	CERAMIC 50V 0.01	4	
			+80%-20%		
		OR ECKZ1H103ZV	CERAMIC 50V 0.01		
			+80%-20%		
C3508,3509		ECEA1CK470	ELECTROLYTIC 16V 47	2	
C3510		ECEA1HK010	ELECTROLYTIC 50V 1	1	
C3511		ECKZ1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
		OR ECKZ1H103ZV	CERAMIC 50V 0.01		
			+80%-20%		
C3512		ECCZ1H270JC	CERAMIC 50V 27P +-5%	1	
		OR			
		ECCZ1H270JC6	CERAMIC 50V 27P +-5%		
C3513		ECKZ1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
		OR ECKZ1H103ZV	CERAMIC 50V 0.01		
			+80%-20%		
C3514		ECCZ1H470JC	CERAMIC 50V 47P +-5%	1	
		OR			
		ECCZ1H470JC6	CERAMIC 50V 47P +-5%		
C3515,3516		ECEA1HK010	ELECTROLYTIC 50V 1	2	
C3517		ECKZ1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		
		OR ECKZ1H103ZV	CERAMIC 50V 0.01		
			+80%-20%		
C3518		ECCZ1H150JC	CERAMIC 50V 15P +-5%	1	
		OR			
		ECCZ1H150JC6	CERAMIC 50V 15P +-5%		
C3519		ECKZ1H103ZF5	CERAMIC 50V 0.01	1	
			+80%-20%		

Ref. No	Part No.	Part Name & Description	Pcs Set	Remarks
	OR ECKZ1H103ZV	CERAMIC 50V 0.01		
		+80%-20%		
C3520	ECCZ1H330JC	CERAMIC 50V 33P +-5%	1	
	OR			
	ECCZ1H330JC6	CERAMIC 50V 33P +-5%		
C3521	ECEA1HK010	ELECTROLYTIC 50V 1	1	
C3522,3523	ECKZ1H103ZF5	CERAMIC 50V 0.01	2	
		+80%-20%		
	OR ECKZ1H103ZV	CERAMIC 50V 0.01		
		+80%-20%		
C3524	ECEA1CK470	ELECTROLYTIC 16V 47	1	
C3525	ECKZ1H103ZF5	CERAMIC 50V 0.01	1	
		+80%-20%		
	OR ECKZ1H103ZV	CERAMIC 50V 0.01		
		+80%-20%		
C3526	ECCZ1H220JC	CERAMIC 50V 22P +-5%	1	
	OR			
	ECCZ1H220JC6	CERAMIC 50V 22P +-5%		
C3527	ECCZ1H470JC	CERAMIC 50V 47P +-5%	1	
	OR			
	ECCZ1H470JC6	CERAMIC 50V 47P +-5%		
C3528	ECEA1HK010	ELECTROLYTIC 50V 1	1	
C3529	ECCZ1H820JC	CERAMIC 50V 82P +-5%	1	
	OR			
	ECCZ1H820JC6	CERAMIC 50V 82P +-5%		
C3530	ECKW1H102KB5	CERAMIC 50V 0.001	1	
C3532,3533	ECKZ1H103ZF5	CERAMIC 50V 0.01	2	
		+80%-20%		
	OR ECKZ1H103ZV	CERAMIC 50V 0.01		
		+80%-20%		
C3534	ECKZ1H331KB	CERAMIC 50V 330P	1	
	OR			
	ECKZ1H331KB6	CERAMIC 50V 330P		
		COILS		
L3501	VLQEL05R330K	33	1	
L3502	VLQEL05R101K	100	1	
L3503-3506	BF30-3.5X6X1	2	4	
L3507,3508	VLQEL05R101K	100	2	
L3509	VLQEL05R470K	47	1	
L3510	VLQEL05R180K	18	1	
L3511	VLQEL05R330K	33	1	
L3512	VLQEL05R181K	180	1	
		MISCELLANEOUS		
	VJHS0045	PACK PIN	3	
	VSCS0410	SHIELD CASE	1	
	VSCS0428	SHIELD CASE	1	
	VSCS0429	SHIELD CASE	1	
	VSCS0430	SHIELD CASE	1	
		LUMINANCE C.B.A		
		INTEGRATED CIRCUITS		
IC3101	AN3210K		1	
IC3102	AN3320K		1	
		DIODES		
D3101,3102	MA165		2	
	OR 1SS119			

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
D3103	EQA02-06	ZENER	1	
	OR RD6.2EB	ZENER		
	OR RD6.8EB	ZENER		
		RESISTORS		
R3101-3103	EVNE4AA00B54	VARIABLE 50K	3	
R3104	EVNE4AA00B14	VARIABLE 10K	1	
R3105	ERDS2TJ103	10K	1	
R3106	ERDS2TJ182	1.8K	1	
R3107	ERDS2TJ563	56K	1	
R3110	ERDS2TJ332	3.3K	1	
R3111	ERDS2TJ822	8.2K	1	
R3112	ERDS2TJ821	820	1	
R3113	ERDS2TJ102	1K	1	
R3114	EVNE4AA00B54	VARIABLE 50K	1	
R3115	ERDS2TJ102	1K	1	
R3116	ERDS2TJ272	2.7K	1	
R3117	ERDS2TJ103	10K	1	
R3118,3119	ERDS2TJ391	390	2	
R3120,3121	ERDS2TJ122	1.2K	2	
R3122	ERDS2TJ562	5.6K	1	
R3123	EVNE4AA00B24	VARIABLE 20K	1	
R3125	ERDS2TJ122	1.2K	1	
R3126	ERDS2TJ152	1.5K	1	
R3127	ERDS2TJ182	1.8K	1	
R3128	ERDS2TJ471	470	1	
R3129	ERDS2TJ151	150	1	
R3130	ERDS2TJ222	2.2K	1	
R3131	ERDS2TJ181	180	1	
R3132	ERDS2TJ103	10K	1	
R3133,3134	ERDS2TJ152	1.5K	2	
R3135	ERDS2TJ122	1.2K	1	
R3140,3141	ERDS2TJ824	820K	2	
R3143	ERDS2TJ473	47K	1	
		CAPACITORS		
C3101	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3102	ECCW1H390JC5	CERAMIC 50V 39P +-5%	1	
C3103	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3105	VCYSARH101KB	CERAMIC 50V 100P	1	
C3106	ECEA1HSR47	ELECTROLYTIC 50V 0.47	1	
C3107	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3108	ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
	OR ECEA0JU221	ELECTROLYTIC 6.3V 220		
C3109	VCYSARH471KB	CERAMIC 50V 470P	1	
C3110	VCYSARH391KB	CERAMIC 50V 390P	1	
C3111	VCYSARH561KB	CERAMIC 50V 560P	1	
C3112	ECEA1HS010	ELECTROLYTIC 50V 1	1	
	OR ECEA1HU010	ELECTROLYTIC 50V 1		
C3113	ECCW1H680JC5	CERAMIC 50V 68P +-5%	1	
C3114	VCYSARH331KB	CERAMIC 50V 330P	1	
C3115-3122	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	8	
C3123,3124	ECCW1H390JC5	CERAMIC 50V 39P +-5%	2	
C3125	ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
	OR ECEA0JU221	ELECTROLYTIC 6.3V 220		
C3126-3128	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	3	
C3129	ECCW1H390JC5	CERAMIC 50V 39P +-5%	1	
C3130	ECEA1HS010	ELECTROLYTIC 50V 1	1	
	OR ECEA1HU010	ELECTROLYTIC 50V 1		
C3131	ECCW1H390JC5	CERAMIC 50V 39P +-5%	1	
C3132	ECEA1ES3R3	ELECTROLYTIC 25V 3.3	1	
	OR ECEA1EU3R3	ELECTROLYTIC 25V 3.3		
C3133,3134	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	2	
C3135	ECEA1HS010	ELECTROLYTIC 50V 1	1	

Ref. No	Part No.	Part Name & Description	Pcs Set	Remarks
	OR ECEA1HU010	ELECTROLYTIC 50V 1		
C3136	VCYSARH681KB	CERAMIC 50V 680P	1	
C3137	ECCW1H151JC5	CERAMIC 50V 150P +-5%	1	
C3138	ECCW1H331J5	CERAMIC 50V 330P +-5%	1	
	OR			
	VCKW1H331JSA	CERAMIC 50V 330P +-5%		
C3139	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C3140	ECCW1H561J5	CERAMIC 50V 560P +-5%	1	
	OR			
	VCKW1H561JSA	CERAMIC 50V 560P +-5%		
C3141	ECCW1H820JC5	CERAMIC 50V 82P +-5%	1	
C3142	ECEA1ES3R3	ELECTROLYTIC 25V 3.3	1	
	OR ECEA1EU3R3	ELECTROLYTIC 25V 3.3		
C3143	ECEA1ES4R7	ELECTROLYTIC 25V 4.7	1	
	OR ECEA1EU4R7	ELECTROLYTIC 25V 4.7		
C3144	ECEA1CS220	ELECTROLYTIC 16V 22	1	
	OR ECEA1CU220	ELECTROLYTIC 16V 22		
C3145	ECEA1ES3R3	ELECTROLYTIC 25V 3.3	1	
	OR ECEA1EU3R3	ELECTROLYTIC 25V 3.3		
C3147	ECEA1HS2R2	ELECTROLYTIC 50V 2.2	1	
		DELAY LINE		
DL3101	EFDEN645A12P		1	
	OR VLDS0003			
		FILTER		
FL3101	ELB4M006		1	
	OR VLFS0011			
		COILS		
L3101,3102	VLQS05R101K	100	2	
L3103	VLQS05R181K	180	1	
L3104	VLQS05R270K	27	1	
L3105	VLQS05R101K	100	1	
L3106,3107	VLQS05R100K	10	2	
		MISCELLANEOUS		
	VJHS0046	PACK LEAD PIN	1	
	VMXS0366	SPACER	1	
	VMZS0081	SPACER	1	
	VSCS0494	ANGLE	1	
		CHROMINANCE C.B.A		
		INTEGRATED CIRCUITS		
IC8101	AN6366NK		1	
IC8102	MN6163A		1	
		TRANSISTORS		
Q8101-8104	2SC2021M(Q,R,S)		4	
	OR			
	2SD636(Q,R,S)			

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
		DIODES		
D8101,8102	MA165		2	
	OR 1SS119			
		RESISTORS		
R8101	ERDS2TJ102	1K	1	
R8102	ERDS2TJ121	120	1	
R8103	ERDS2TJ152	1.5K	1	
R8104	ERDS2TJ122	1.2K	1	
R8105	ERDS2TJ222	2.2K	1	
R8106	ERDS2TJ272	2.7K	1	
R8107,8108	ERDS2TJ682	6.8K	2	
R8109	EVNE4AA00B54	VARIABLE 50K	1	
R8110	ERDS2TJ183	18K	1	
R8111	ERDS2TJ271	270	1	
R8112	ERDS2TJ822	8.2K	1	
R8113	EVNE4AA00B53	VARIABLE 5K	1	
R8114	ERDS2TJ122	1.2K	1	
R8115	ERDS2TJ822	8.2K	1	
R8116	ERDS2TJ183	18K	1	
R8117	ERDS2TJ471	470	1	
R8119	ERDS2TJ223	22K	1	
R8120	ERDS2TJ102	1K	1	
R8122	ERDS2TJ470	47	1	
R8123,8124	ERDS2TJ122	1.2K	2	
R8125	ERDS2TJ102	1K	1	
R8126	ERDS2TJ271	270	1	
R8127	ERDS2TJ102	1K	1	
R8129	ERDS2TJ822	8.2K	1	
R8130	ERDS2TJ183	18K	1	
R8131	ERDS2TJ562	5.6K	1	
R8132	ERDS2TJ561	560	1	
R8133	ERDS2TJ273	27K	1	
R8134	ERDS2TJ153	15K	1	
R8135	ERDS2TJ561	560	1	
R8136	ERDS2TJ472	4.7K	1	
R8137	ERDS2TJ821	820	1	
R8138	ERDS2TJ472	4.7K	1	
R8139	ERDS2TJ122	1.2K	1	
		CAPACITORS		
C8101,8102	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	2	
C8103	VCYW1E183KX	CERAMIC 25V 0.018	1	
C8104	VCYSARH680J	CERAMIC 50V 68P +-5%	1	
C8105,8106	VCYSARH121KB	CERAMIC 50V 120P	2	
C8107	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C8108	ECEA1HK010	ELECTROLYTIC 50V 1	1	
C8109	ECEA0JS470	ELECTROLYTIC 6.3V 47	1	
C8110	VCYSARH5R6KC	CERAMIC 50V 5.6P	1	
C8111	MCV03R200ER	TRIMMER 20P	1	
C8112	VCYSARH102KB	CERAMIC 50V 0.001	1	
C8113	ECEA0JS221	ELECTROLYTIC 6.3V 220	1	
C8114	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C8115	VCYSARH102KB	CERAMIC 50V 0.001	1	
C8116	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C8117	VCYW1C104MX	CERAMIC 16V 0.1	1	
		+-20%		
C8118,8119	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	2	
C8120	VCYSARC222NX	CERAMIC 16V 0.0022 +-30%	1	
C8121	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C8122	VCYW1C104MX	CERAMIC 16V 0.1	1	
		+-20%		
C8123-8130	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	8	
C8131	VCYSARH680J	CERAMIC 50V 68P +-5%	1	
C8132	VCYSARH271KB	CERAMIC 50V 270P	1	
C8133	VCYSARH680J	CERAMIC 50V 68P +-5%	1	

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
C8134	VCYSARC472NX	CERAMIC 16V 0.0047 +-30%	1	
C8135	VCYSARH680J	CERAMIC 50V 68P +-5%	1	
C8136	VCYSARH220J	CERAMIC 50V 22P +-5%	1	
C8137	ECEA1ES3R3	ELECTROLYTIC 25V 3.3	1	
C8138	ECEA1ES4R7	ELECTROLYTIC 25V 4.7	1	
C8139	VCYW1C104MX	CERAMIC 16V 0.1	1	
		+-20%		
C8140	VCYSARH150JC	CERAMIC 50V 15P +-5%	1	
C8142	VCYW1C104MX	CERAMIC 16V 0.1	1	
		+-20%		
		DELAY LINE		
DL8101	EFDVN645B15G		1	
		FILTERS		
FL8101	ELB5G033		1	
	OR VLFS0008			
		COILS		
L8101	VLQS05R471K	470	1	
L8102	VLQS05R221K	220	1	
L8103	VLQS05R331K	330	1	
L8104,8105	VLQS05R101K	100	2	
L8106,8107	VLQS05R181K	180	2	
L8108	VLQS66R102K	1M	1	
L8109	VLQS05R470K	47	1	
		CRYSTALS OSCILLATOR		
X8101	VSXS0003		1	
	OR VSX0060			
		MISCELLANEOUS		
	VJHS0046	PACK LEAD PIN	1	
		TV DEMODULATOR UNIT		
		INTEGRATED CIRCUITS		
IC701	AN5135K		1	
		TRANSISTORS		
Q701	2SC2188		1	
Q702	2SD637(Q,R)		1	
		DIODES		
D701	MA27T-B		1	
		RESISTORS		
R702,703	ERDS2TJ562	5.6K	2	
R704	ERDS2TJ271	270	1	
R705	ERDS2TJ221	220	1	

Ref. No.	Part No.	Part Name & Description	Pcs Set	Remarks
R706,707	ERDS2TJ821	820	2	
R708	ERDS2TJ561	560	1	
R709	ERDS2TJ470	47	1	
R710	ERDS2TJ122	1.2K	1	
R711	ERDS2TJ474	470K	1	
R712	ERDS2TJ183	18K	1	
R713	ERDS2TJ221	220	1	
R714	ERDS2TJ821	820	1	
R715	AVNE4AA0B682	VARIABLE 6.8K	1	
	OR			
	EVNE4AA00B53	VARIABLE 5K		
R716	ERDS2TJ471	470	1	
R718	AVNE4AA0B103	VARIABLE 10K	1	
	OR			
	EVNE4AA00B14	VARIABLE 10K		
R719	ERDS2TJ272	2.7K	1	
R720	ERDS2TJ680	68	1	
R721	ERDS1TJ680	1/2W 68	1	
R722	ERDS1TJ101	1/2W 100	1	
R723	ERDS2TJ101	100	1	
R724	ERDS2TJ562	5.6K	1	
R726	ERDS2TJ222	2.2K	1	
R727	ERDS2TJ102	1K	1	
R729	ERDS2TJ681	680	1	
R730	ERDS2TJ104	100K	1	
R732	ERDS2TJ222	2.2K	1	
R734	ERDS2TJ102	1K	1	
R735	ERDS2TJ152	1.5K	1	
		CAPACITORS		
C701-704	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	4	
C705	ECEA1CK330	ELECTROLYTIC 16V 33	1	
C706,707	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	2	
C708	ECQV05474JB	POLYESTER 50V 0.47 +-5%	1	
	OR ECQV05474JV	POLYESTER 50V 0.47 +-5%		
	OR ECQV1H474JZ	POLYESTER 50V 0.47 +-5%		
C709	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C710	ECEA1HK010	ELECTROLYTIC 50V 1	1	
C713	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C715	ECCW1H180JC5	CERAMIC 50V 18P +-5%	1	
C716	ECKW1H101KB5	CERAMIC 50V 100P	1	
C717	ECCW1H820JR5	CERAMIC 50V 82P +-5%	1	
C718	ECCW1H120JC5	CERAMIC 50V 12P +-5%	1	
C719	ECCW1H220JC5	CERAMIC 50V 22P +-5%	1	
C720,721	ECQV05473JV	POLYESTER 50V 0.047 +-5%	2	
	OR ECQV05473JZ	POLYESTER 50V 0.047 +-5%		
	OR ECQV1H473JZ	POLYESTER 50V 0.047 +-5%		
C722	ECEA1HKR47	ELECTROLYTIC 50V 0.47	1	
C723	ECEA1CK470	ELECTROLYTIC - 16V 47	1	
C726	ECCW1H040CC5	CERAMIC 50V 4P +-0.25P	1	
C727	ECQM1H223KV	POLYESTER 50V 0.022	1	
	OR ECQM1H223KZ	POLYESTER 50V 0.022		
C728	ECCW1H560JC5	CERAMIC 50V 56P +-5%	1	
C729	ECEA1EK4R7	ELECTROLYTIC 25V 4.7	1	
C731	ECCW1H270JC5	CERAMIC 50V 27P +-5%	1	
C733	ECEA1HK010	ELECTROLYTIC 50V 1	1	
C734	VCYSARC103NY	CERAMIC 16V 0.01 +-30%	1	
C736	ECCW1H560JC5	CERAMIC 50V 56P +-5%	1	
		FILTERS		
FL701	SFE4R5MB4	CERAMIC	1	
FL702	EFCS4R5MW3	CERAMIC	1	
	OR TFCS4R5MW3	CERAMIC		
FL703	VLFS0006		1	
FL704	VSXS0004		1	

Ref. No.		Part No.	Part Name & Description	Pcs / Set	Remarks
			COILS		
L702		ELQR82KB	0.82	1	
		OR TLQR82N205C	0.82		
L703		VLQS66R4R7K	4.7	1	
L705		ELQR47KB	0.47	1	
		OR TLQR47N205C	0.47		
L706		VLQS66R120K	12	1	
L707		VLQS66R680K	68	1	
L708		VLQS66R4R7K	4.7	1	
L709		VLQS66R470K	47	1	
L710		VLQS66R680K	68	1	
L712		VLQS66R220K	22	1	
			TRANSFORMER		
T701		EIV7EF002B		1	
T702		EIV7EF001B		1	
			MISCELLANEOUS		
		VJHS0045	PACK PIN	3	
		VSCS0389	SHIELD CASE	1	
		VSCS0390	SHIELD CASE	1	
			ELECTRICAL PARTS LOCATED ON CHASSIS		
		TBM76680	BARRIER	1	(B)
		TEL302-5X	CHECK TERMINAL	2	
		TJE98101	CHECK TERMINAL	12	
		TNV56751F2R	UHF/VHF TUNER UNIT	1	
		VEJS0020	VHF BLOK	1	
		VEKS1524	ANT CABLE	1	
		VEKS1525	RF CABLE	1	
	⚠	VEKS1534	AC CORD UNIT	1	
		VEKS1756	LUG ASS'Y	1	(B)
		VEPS00269A	REEL SENSOR UNIT	1	
		VEQS0252	RF CONVERTER	1	
		VEQS0253	RF CONVERTER	1	
		VEQS0254	RF CONVERTER	1	
		VEQS0255	RF CONVERTER	1	
		VJBS00287	SWITCH P.C.B	1	
		VJBS00296	CONNECTION P.C.B	1	
		VJES0005	CHECK TERMINAL	8	
		VJES0007	CHECK TERMINAL	40	
		VJES0008	CHECK TERMINAL	2	
		VEKS1523	ANT TERMINAL UNIT	1	
		VJPS0115	PIN HEADER 7P	1	
		VLTS0002	BALLOON CORE	1	
		VMXS0333	REEL SENSOR SPACER	1	
		VQLS0768	FUSE CAUTION LABEL	1	
		VSCS0283	ANT COVER	1	
		VSCS0517	SHIELD CASE	1	(B)
		VSMS0007	SAFETY SWITCH	1	
		VSMS0009	CASSETTE IN SWITCH	1	
		VSMS0010	CASSETTE UP DOWN SWITCH	1	
		VXKS0342	SENSOR LED UNIT	1	
		XNG3	M3 NUT	1	
		XTV3+10B	TAPPING SCREW 3X10	2	
		XTV3+8B	TAPPING SCREW 3X8	1	
		XTV3+8FX	TAPPING SCREW 3X8	2	
		XYN3+F12FNS	SCREW WITH WASHER 3X12	1	
IC1551		ON2160	INTEGRATED CIRCUITS	1	
Q1551,1552		PN150NV	PHOTO TRANSISTOR	2	
R1551		ERDS2TJ100	RESISTOR 10	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R1552	ERDS2TJ100	RESISTOR 10	1	(B)
		WIRED TRANSMITTER C.B.A		(A)
		RESISTORS		
R6601	ERDS2TJ362	3.6K	1	
R6602	ERDS2TJ752	7.5K	1	
R6603,6604	ERDS2TJ153	15K	2	
		SWITCH		
SW6601-6606	EVQ-QJR02K		6	
		IR WIRELESS TRANSMITTER C.B.A		(B)
		INTEGRATED CIRCUITS		
IC1	UPD6108C-003		1	
		TRANSISTORS		
Q1	2SD1458		1	
		DIODES		
D1	LN66NC		1	
		RESISTORS		
R1	ERDS2TJ102	1K	1	
R2	ERDS2TJ473	47K	1	
R3	ERDS2TJ1R0	1	1	
		CAPACITORS		
C1,2	ECKF1H471KB	CERAMIC 50V 470P	2	
C3	ECEA0JK101	ELECTROLYTIC 6.3V 100	1	
		CRYSTALS OSCILLATOR		
X1	CSB455PB6T		1	
	OR			
	EF0A455K05B1			
		IR WIRELESS RECEIVING DETECTOR C.B.A		(B)(VEQS0285) (VEQS0293)
		INTEGRATED CIRCUITS		
IC1	UPC1373H	(VEQS0285)	1	
	OR UPC1373HA			
IC1	LA7224	(VEQS0293)	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		DIODES		
D1	PH302		1	
	OR PN313			
	OR TPS703	(VEQS0285)	1	
		RESISTORS		
R1	ERDS2TJ102	1K	1	
R2	ERDS2TJ560	(VEQS0285) 56	1	
R2	ERDS2TJ330	(VEQS0293) 33	1	
R3	ERDS2TJ224	(VEQS0285) 220K	1	
R4	ERDS2TJ182	(VEQS0293) 1.8K	1	
		CAPACITORS		
C1	ECEA1CK100	ELECTROLYTIC 16V 10	1	
C2	ECEA1EK4R7	ELECTROLYTIC 25V 4.7	1	
		(VEQS0285)		
C2	ECEA1HK2R2	ELECTROLYTIC 50V 2.2	1	
		(VEQS0293)		
C3	ECEA1CK100	ELECTROLYTIC 16V 10	1	
		(VEQS0285)		
C3	ECEA1EK4R7	ELECTROLYTIC 25V 4.7	1	
		(VEQS0293)		
C4	AMZV50K183	POLYESTER 50V 0.018	1	
		(VEQS0285)		
C4	ECQB1H182KH	POLYESTER 50V 0.018	1	
		(VEQS0293)		
C5	ECEA1CK470	ELECTROLYTIC 16V 47	1	
C6	APSV100J182	POLYESTER 100V 0.0018 +-5%	1	
		COILS		
T1	ELM7Q206A		1	